

# **Potential Flow Forces and Moments from Selected Ship Flow Codes in a Set of Numerical Experiments**

## **Appendix N — Minimum and Maximum Plots for Prescribed Roll Motion of Model 5514**

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N-835.	Minimum and Maximum of $M_y^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN. . . . .	N-599
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N-849.	Minimum and Maximum of $M_y^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1. . . . .	N-608
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N-855.	Minimum and Maximum of $M_y^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA. . . . .	N-611
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N-858.	Minimum and Maximum of $M_y^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2. . . . .	N-613
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N-863.	Minimum and Maximum of $M_y^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA. . . . .	N-616
N-864.	Minimum and Maximum of $M_y^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO. . . . .	N-616
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N-877.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3. . . . .	N-625
N-878.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4. . . . .	N-625
N-879.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA. . . . .	N-626
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N-883.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN. . . . .	N-629
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N-891.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN. . . . .	N-634
N-892.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1. . . . .	N-634
N-893.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3. . . . .	N-635
N-894.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4. . . . .	N-635
N-895.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA. . . . .	N-636
N-896.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO. . . . .	N-636
N-897.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1. . . . .	N-638
N-898.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2. . . . .	N-638
N-899.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN. . . . .	N-639
N-900.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1. . . . .	N-639
N-901.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3. . . . .	N-640
N-902.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4. . . . .	N-640
N-903.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA. . . . .	N-641
N-904.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO. . . . .	N-641

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N-905.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1. . . . .	N-643
N-906.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2. . . . .	N-643
N-907.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN. . . . .	N-644
N-908.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1. . . . .	N-644
N-909.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3. . . . .	N-645
N-910.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4. . . . .	N-645
N-911.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA. . . . .	N-646
N-912.	Minimum and Maximum of $M_z^{\text{rad}}$ for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO. . . . .	N-646

### Introduction

This appendix contains plots and tables related to the minimum and maximum value of each variable versus the roll amplitude  $\phi_a$  for the prescribed roll motion of Model 5514 in task 1. The plots are found in Figures N-1 through N-114. For each variable, speed, and frequency there is one plot that depicts the results from all the codes. If  $f$  stands for a time-dependent variable, then the quantities plotted are the minimum and maximum of

$$f^* \equiv \frac{f - \langle f \rangle}{\phi_a}$$

where  $\langle f \rangle$  is the mean. Only filtered values  $f$  are used since filtered values lessen the impact of spikes that probably originate in numerical filtering schemes in the codes. Linear variation as a function of the amplitude appears as a horizontal line. Quadratic variation appears as a straight line with a nonzero slope.

Tables N-1 through N-912 in this appendix correspond to the plots. Following each plot is one table for each of the eight codes for which data were received. The tables give information about the mean, the minimum and maximum of the unfiltered variable, the minimum and maximum of the filtered variable, and the starred function depicted in the figure.

For the corresponding time history plots, the reader is referred to Appendix D.

# TASK 1/ROLL MOTION/MODEL 5514

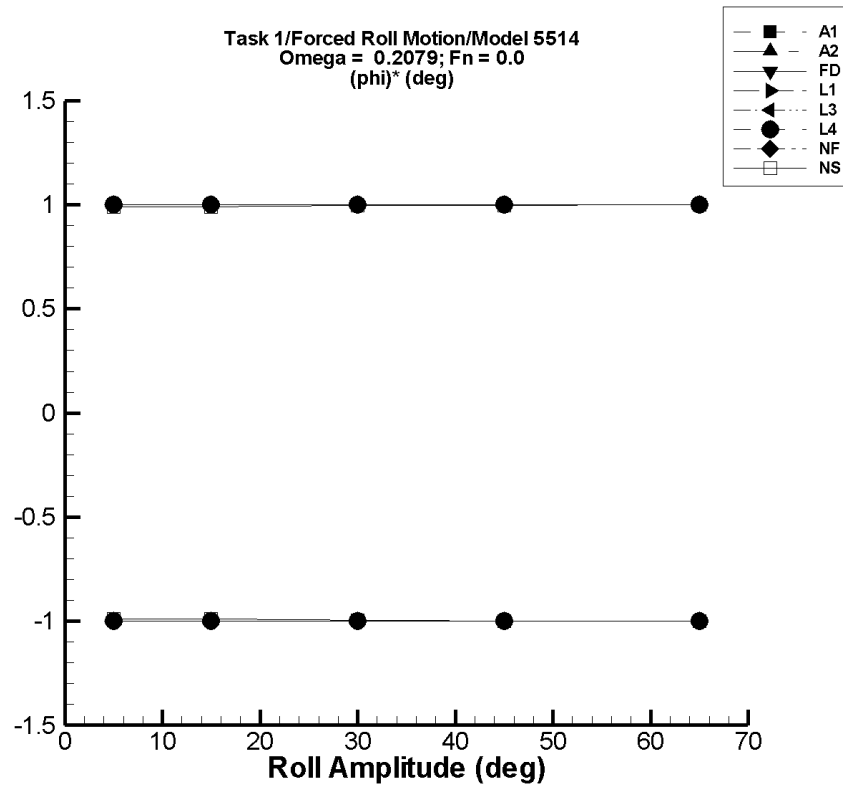


Figure N-1. Minimum and Maximum of  $(\phi)^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N–1. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-3.69E-06	-5.00	5.00	-5.00	5.00	-0.999	1.00
15.	-1.17E-05	-15.0	15.0	-15.0	15.0	-0.999	1.00
30.	-2.30E-05	-30.0	30.0	-30.0	30.0	-0.999	1.00
45.	-3.89E-05	-45.0	45.0	-45.0	45.0	-0.999	1.00
65.	-4.87E-05	-65.0	65.0	-64.9	65.0	-0.999	1.00

Table N–2. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-3.69E-06	-5.00	5.00	-5.00	5.00	-0.999	1.00
15.	-1.17E-05	-15.0	15.0	-15.0	15.0	-0.999	1.00
30.	-2.30E-05	-30.0	30.0	-30.0	30.0	-0.999	1.00
45.	-3.89E-05	-45.0	45.0	-45.0	45.0	-0.999	1.00
65.	-4.87E-05	-65.0	65.0	-64.9	65.0	-0.999	1.00

Table N–3. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	1.60E-07	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	-3.88E-07	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	-2.43E-06	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	-4.26E-09	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	-8.71E-06	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–4. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-5.24E-06	-5.00	5.00	-5.00	5.00	-1.00	1.00
15.	6.20E-06	-15.0	15.0	-15.0	15.0	-1.00	1.00
30.	3.60E-06	-30.0	30.0	-30.0	30.0	-1.00	1.00
45.	3.14E-05	-45.0	45.0	-45.0	45.0	-1.00	1.00
65.	-1.53E-04	-65.0	65.0	-65.0	65.0	-1.00	1.00



Table N–5. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-5.24E-06	-5.00	5.00	-5.00	5.00	-1.00	1.00
15.	6.20E-06	-15.0	15.0	-15.0	15.0	-1.00	1.00
30.	3.60E-06	-30.0	30.0	-30.0	30.0	-1.00	1.00
45.	3.14E-05	-45.0	45.0	-45.0	45.0	-1.00	1.00
65.	-1.53E-04	-65.0	65.0	-65.0	65.0	-1.00	1.00

Table N–6. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-5.24E-06	-5.00	5.00	-5.00	5.00	-1.00	1.00
15.	6.20E-06	-15.0	15.0	-15.0	15.0	-1.00	1.00
30.	3.60E-06	-30.0	30.0	-30.0	30.0	-1.00	1.00
45.	3.14E-05	-45.0	45.0	-45.0	45.0	-1.00	1.00
65.	-1.53E-04	-65.0	65.0	-65.0	65.0	-1.00	1.00

Table N-7. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle \phi \rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-8. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle \phi \rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	4.90E-07	-5.00	5.00	-4.95	4.95	-0.990	0.990
15.	1.98E-06	-15.0	15.0	-14.9	14.9	-0.990	0.990
30.	1.84E-06	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	-3.41E-06	-45.0	45.0	-44.9	44.9	-0.998	0.998
65.	2.47E-06	-65.0	65.0	-64.9	64.9	-0.999	0.999

# TASK 1/ROLL MOTION/MODEL 5514

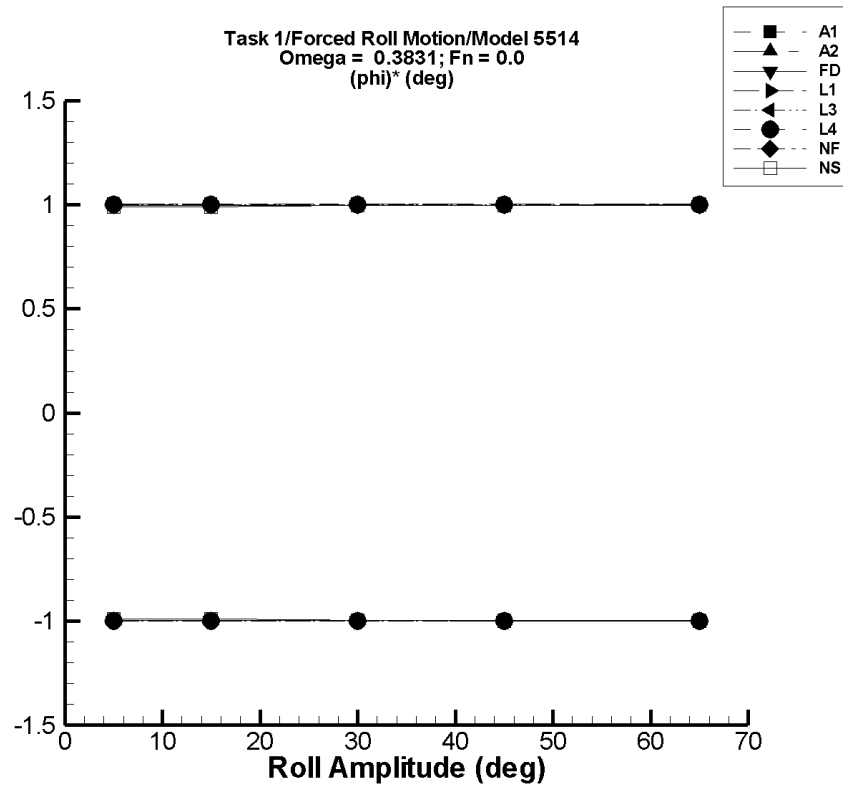


Figure N-2. Minimum and Maximum of  $(\phi)^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N–9. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-6.11E-08	-5.00	5.00	-4.98	5.02	-0.997	1.00
15.	1.18E-06	-15.0	15.0	-14.9	15.0	-0.996	1.00
30.	1.43E-06	-30.0	30.0	-29.9	30.1	-0.996	1.00
45.	-3.38E-06	-45.0	45.0	-44.8	45.1	-0.996	1.00
65.	9.03E-06	-65.0	65.0	-64.8	65.2	-0.996	1.00

Table N–10. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-6.11E-08	-5.00	5.00	-4.98	5.02	-0.997	1.00
15.	1.18E-06	-15.0	15.0	-14.9	15.0	-0.996	1.00
30.	1.43E-06	-30.0	30.0	-29.9	30.1	-0.996	1.00
45.	-3.38E-06	-45.0	45.0	-44.8	45.1	-0.996	1.00
65.	9.03E-06	-65.0	65.0	-64.8	65.2	-0.996	1.00

Table N–11. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	1.50E-07	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.43E-06	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	4.46E-06	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	3.83E-06	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	9.18E-06	-65.0	65.0	-64.8	64.8	-0.996	0.996

Table N–12. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	2.99E-05	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	1.39E-04	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	2.76E-04	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	1.74E-04	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	2.76E-04	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–13. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	2.99E-05	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	1.39E-04	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	2.76E-04	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	1.74E-04	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	2.76E-04	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–14. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	2.99E-05	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	1.39E-04	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	2.76E-04	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	1.74E-04	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	2.76E-04	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–15. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–16. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	3.61E-08	-5.00	5.00	-4.95	4.95	-0.990	0.990
15.	5.14E-07	-15.0	15.0	-14.9	14.9	-0.990	0.990
30.	-1.69E-07	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	-4.20E-06	-45.0	45.0	-44.9	44.9	-0.998	0.998
65.	-5.91E-06	-65.0	65.0	-65.0	65.0	-0.999	0.999

# TASK 1/ROLL MOTION/MODEL 5514

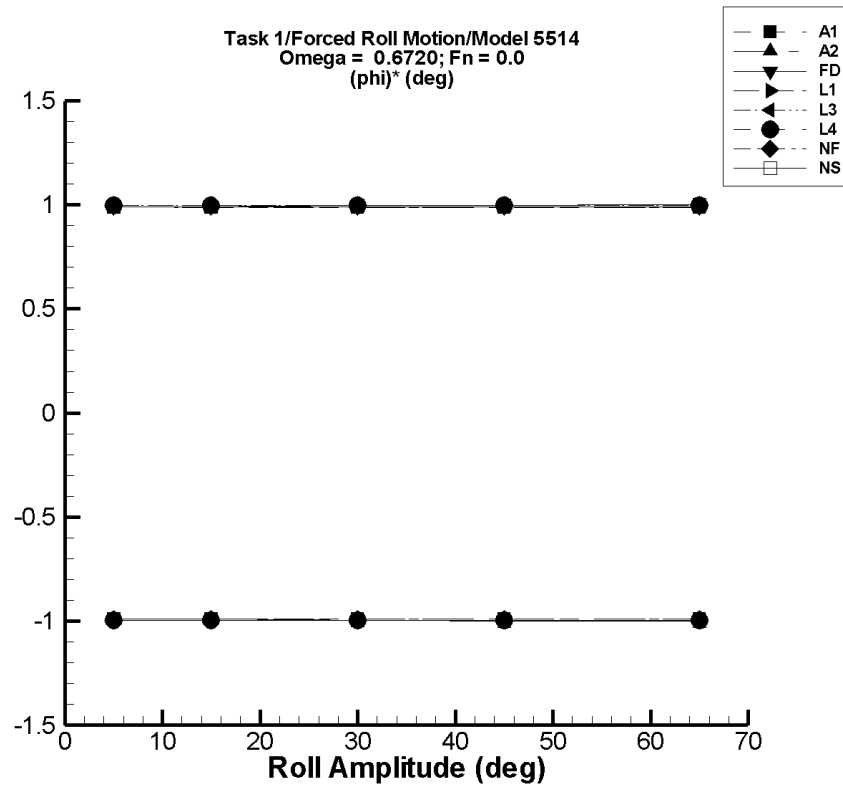


Figure N-3. Minimum and Maximum of  $(\phi)^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.



Table N–17. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-4.92E-06	-5.00	5.00	-4.94	4.94	-0.989	0.989
15.	-1.51E-05	-15.0	15.0	-14.8	14.8	-0.988	0.988
30.	-2.94E-05	-30.0	30.0	-29.7	29.6	-0.988	0.988
45.	-4.72E-05	-45.0	45.0	-44.5	44.5	-0.988	0.988
65.	-6.81E-05	-65.0	65.0	-64.2	64.2	-0.988	0.988

Table N–18. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-4.92E-06	-5.00	5.00	-4.94	4.94	-0.989	0.989
15.	-1.51E-05	-15.0	15.0	-14.8	14.8	-0.988	0.988
30.	-2.94E-05	-30.0	30.0	-29.7	29.6	-0.988	0.988
45.	-4.72E-05	-45.0	45.0	-44.5	44.5	-0.988	0.988
65.	-6.81E-05	-65.0	65.0	-64.2	64.2	-0.988	0.988

Table N–19. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-6.65E-06	-5.00	5.00	-4.97	4.94	-0.995	0.988
15.	-1.95E-05	-15.0	15.0	-14.9	14.8	-0.995	0.988
30.	-3.96E-05	-30.0	30.0	-29.8	29.7	-0.995	0.988
45.	-5.69E-05	-45.0	45.0	-44.8	44.5	-0.995	0.988
65.	-8.29E-05	-65.0	65.0	-64.7	64.3	-0.995	0.988

Table N–20. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	9.21E-05	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.88E-04	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	5.87E-04	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	8.14E-04	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	1.24E-03	-65.0	65.0	-64.7	64.7	-0.996	0.996

Table N–21. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	9.21E-05	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.88E-04	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	5.87E-04	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	8.14E-04	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	1.24E-03	-65.0	65.0	-64.7	64.7	-0.996	0.996

Table N–22. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	9.21E-05	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.88E-04	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	5.87E-04	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	8.14E-04	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	1.24E-03	-65.0	65.0	-64.7	64.7	-0.996	0.996

Table N–23. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–24. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-2.79E-07	-5.00	5.00	-4.95	4.95	-0.990	0.990
15.	-8.78E-07	-15.0	15.0	-14.9	14.9	-0.990	0.990
30.	1.94E-06	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	5.33E-07	-45.0	45.0	-44.9	44.9	-0.998	0.998
65.	-4.64E-06	-65.0	65.0	-65.0	65.0	-0.999	0.999

# TASK 1/ROLL MOTION/MODEL 5514

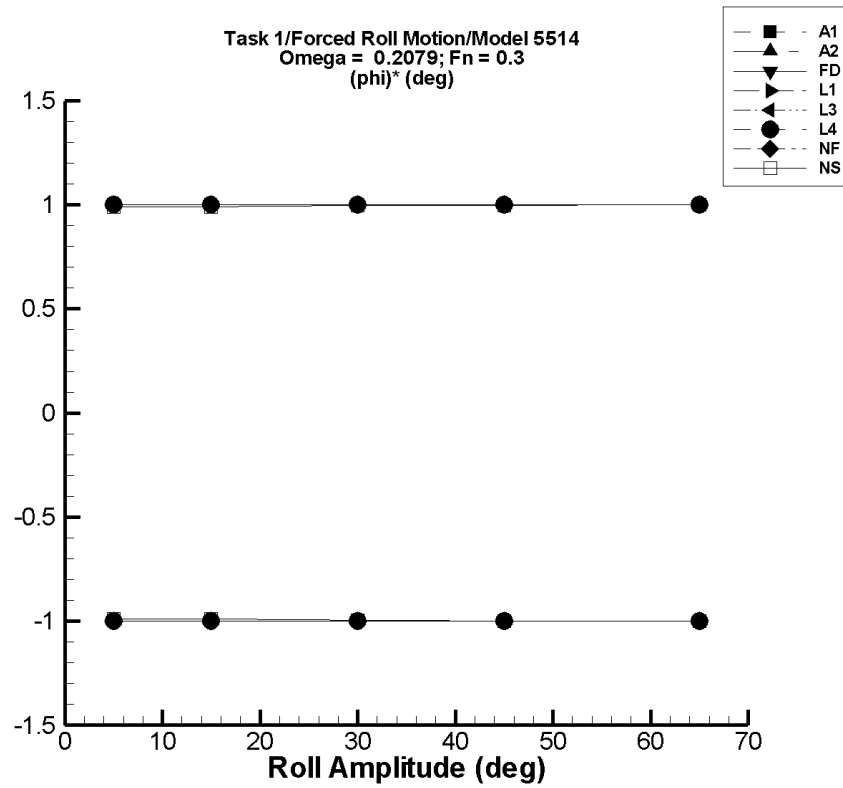


Figure N-4. Minimum and Maximum of  $(\phi)^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N–25. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-3.69E-06	-5.00	5.00	-5.00	5.00	-0.999	1.00
15.	-1.17E-05	-15.0	15.0	-15.0	15.0	-0.999	1.00
30.	-2.30E-05	-30.0	30.0	-30.0	30.0	-0.999	1.00
45.	-3.89E-05	-45.0	45.0	-45.0	45.0	-0.999	1.00
65.	-4.87E-05	-65.0	65.0	-64.9	65.0	-0.999	1.00

Table N–26. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-3.69E-06	-5.00	5.00	-5.00	5.00	-0.999	1.00
15.	-1.17E-05	-15.0	15.0	-15.0	15.0	-0.999	1.00
30.	-2.30E-05	-30.0	30.0	-30.0	30.0	-0.999	1.00
45.	-3.89E-05	-45.0	45.0	-45.0	45.0	-0.999	1.00
65.	-4.87E-05	-65.0	65.0	-64.9	65.0	-0.999	1.00

Table N–27. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	1.60E-07	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	-3.88E-07	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	-2.43E-06	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	-4.26E-09	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	-8.71E-06	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–28. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-5.24E-06	-5.00	5.00	-5.00	5.00	-1.00	1.00
15.	6.20E-06	-15.0	15.0	-15.0	15.0	-1.00	1.00
30.	3.60E-06	-30.0	30.0	-30.0	30.0	-1.00	1.00
45.	3.14E-05	-45.0	45.0	-45.0	45.0	-1.00	1.00
65.	-1.53E-04	-65.0	65.0	-65.0	65.0	-1.00	1.00

Table N–29. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-5.24E-06	-5.00	5.00	-5.00	5.00	-1.00	1.00
15.	6.20E-06	-15.0	15.0	-15.0	15.0	-1.00	1.00
30.	3.60E-06	-30.0	30.0	-30.0	30.0	-1.00	1.00
45.	3.14E-05	-45.0	45.0	-45.0	45.0	-1.00	1.00
65.	-1.53E-04	-65.0	65.0	-65.0	65.0	-1.00	1.00

Table N–30. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-5.24E-06	-5.00	5.00	-5.00	5.00	-1.00	1.00
15.	6.20E-06	-15.0	15.0	-15.0	15.0	-1.00	1.00
30.	3.60E-06	-30.0	30.0	-30.0	30.0	-1.00	1.00
45.	3.14E-05	-45.0	45.0	-45.0	45.0	-1.00	1.00
65.	-1.53E-04	-65.0	65.0	-65.0	65.0	-1.00	1.00



Table N–31. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–32. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	4.90E-07	-5.00	5.00	-4.95	4.95	-0.990	0.990
15.	1.98E-06	-15.0	15.0	-14.9	14.9	-0.990	0.990
30.	1.84E-06	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	-3.41E-06	-45.0	45.0	-44.9	44.9	-0.998	0.998
65.	2.87E-06	-65.0	65.0	-65.0	65.0	-0.999	0.999

# TASK 1/ROLL MOTION/MODEL 5514

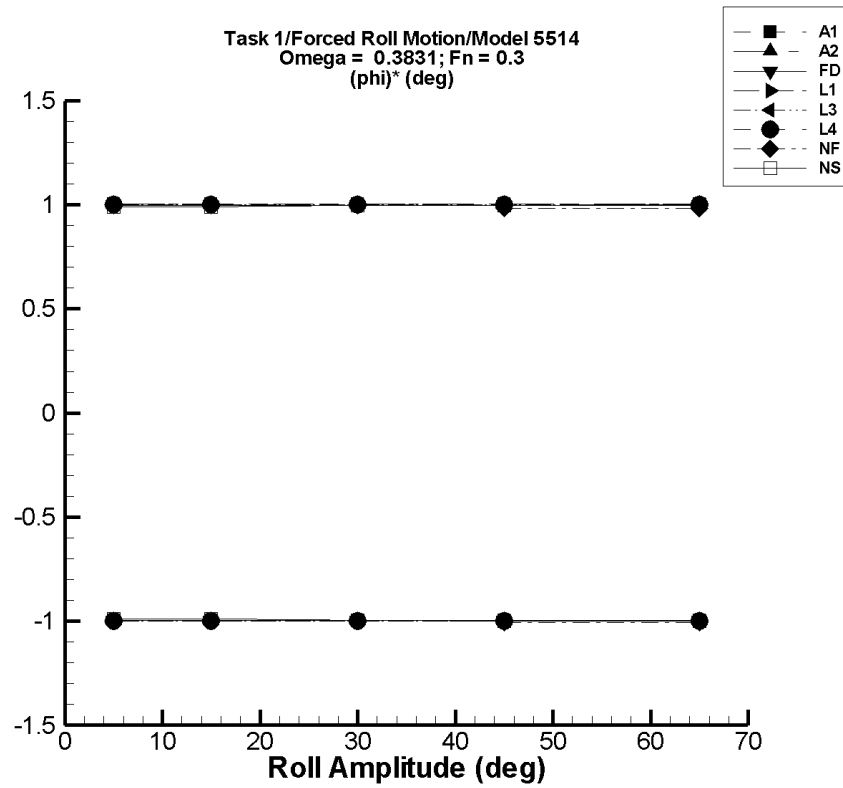


Figure N-5. Minimum and Maximum of  $(\phi)^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N–33. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-6.11E-08	-5.00	5.00	-4.98	5.02	-0.997	1.00
15.	1.18E-06	-15.0	15.0	-14.9	15.0	-0.996	1.00
30.	1.43E-06	-30.0	30.0	-29.9	30.1	-0.996	1.00
45.	-3.38E-06	-45.0	45.0	-44.8	45.1	-0.996	1.00
65.	9.03E-06	-65.0	65.0	-64.8	65.2	-0.996	1.00

Table N–34. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-6.11E-08	-5.00	5.00	-4.98	5.02	-0.997	1.00
15.	1.18E-06	-15.0	15.0	-14.9	15.0	-0.996	1.00
30.	1.43E-06	-30.0	30.0	-29.9	30.1	-0.996	1.00
45.	-3.38E-06	-45.0	45.0	-44.8	45.1	-0.996	1.00
65.	9.03E-06	-65.0	65.0	-64.8	65.2	-0.996	1.00

Table N–35. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	1.50E-07	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.43E-06	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	4.46E-06	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	3.83E-06	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	9.18E-06	-65.0	65.0	-64.8	64.8	-0.996	0.996

Table N–36. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	2.99E-05	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	1.39E-04	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	2.76E-04	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	1.74E-04	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	2.76E-04	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–37. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	2.99E-05	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	1.39E-04	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	2.76E-04	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	1.74E-04	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	2.76E-04	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–38. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	2.99E-05	-5.00	5.00	-4.99	4.99	-0.999	0.999
15.	1.39E-04	-15.0	15.0	-15.0	15.0	-0.999	0.999
30.	2.76E-04	-30.0	30.0	-30.0	30.0	-0.999	0.999
45.	1.74E-04	-45.0	45.0	-44.9	44.9	-0.999	0.999
65.	2.76E-04	-65.0	65.0	-64.9	64.9	-0.999	0.999

Table N–39. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	0.344	-30.0	30.0	-29.8	29.8	-1.01	0.983
45.	0.516	-45.0	45.0	-44.7	44.7	-1.01	0.983
65.	0.746	-65.0	65.0	-64.6	64.6	-1.01	0.983

Table N–40. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered ( $\phi$ )*	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	3.61E-08	-5.00	5.00	-4.95	4.95	-0.990	0.990
15.	5.14E-07	-15.0	15.0	-14.9	14.9	-0.990	0.990
30.	-1.69E-07	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	-4.20E-06	-45.0	45.0	-44.9	44.9	-0.998	0.998
65.	-5.91E-06	-65.0	65.0	-65.0	65.0	-0.999	0.999

# TASK 1/ROLL MOTION/MODEL 5514

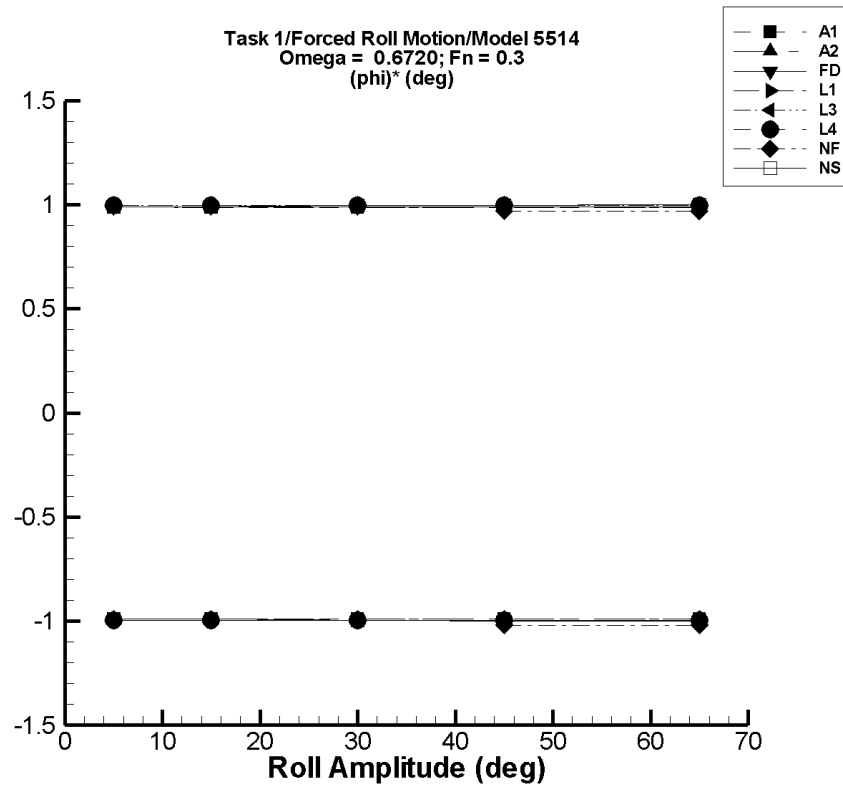


Figure N-6. Minimum and Maximum of  $(\phi)^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N–41. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-4.92E-06	-5.00	5.00	-4.94	4.94	-0.989	0.989
15.	-1.51E-05	-15.0	15.0	-14.8	14.8	-0.988	0.988
30.	-2.94E-05	-30.0	30.0	-29.7	29.6	-0.988	0.988
45.	-4.72E-05	-45.0	45.0	-44.5	44.5	-0.988	0.988
65.	-6.81E-05	-65.0	65.0	-64.2	64.2	-0.988	0.988

Table N–42. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-4.92E-06	-5.00	5.00	-4.94	4.94	-0.989	0.989
15.	-1.51E-05	-15.0	15.0	-14.8	14.8	-0.988	0.988
30.	-2.94E-05	-30.0	30.0	-29.7	29.6	-0.988	0.988
45.	-4.72E-05	-45.0	45.0	-44.5	44.5	-0.988	0.988
65.	-6.81E-05	-65.0	65.0	-64.2	64.2	-0.988	0.988



Table N–43. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-6.65E-06	-5.00	5.00	-4.97	4.94	-0.995	0.988
15.	-1.95E-05	-15.0	15.0	-14.9	14.8	-0.995	0.988
30.	-3.96E-05	-30.0	30.0	-29.8	29.7	-0.995	0.988
45.	-5.69E-05	-45.0	45.0	-44.8	44.5	-0.995	0.988
65.	-8.29E-05	-65.0	65.0	-64.7	64.3	-0.995	0.988

Table N–44. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	9.21E-05	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.88E-04	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	5.87E-04	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	8.14E-04	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	1.24E-03	-65.0	65.0	-64.7	64.7	-0.996	0.996

Table N–45. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	9.21E-05	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.88E-04	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	5.87E-04	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	8.14E-04	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	1.24E-03	-65.0	65.0	-64.7	64.7	-0.996	0.996

Table N–46. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	9.21E-05	-5.00	5.00	-4.98	4.98	-0.996	0.996
15.	2.88E-04	-15.0	15.0	-14.9	14.9	-0.996	0.996
30.	5.87E-04	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	8.14E-04	-45.0	45.0	-44.8	44.8	-0.996	0.996
65.	1.24E-03	-65.0	65.0	-64.7	64.7	-0.996	0.996

Table N-47. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	0.753	-30.0	30.0	-29.8	29.9	-1.02	0.970
45.	1.13	-44.9	45.0	-44.7	44.8	-1.02	0.970
65.	1.63	-64.9	65.0	-64.6	64.7	-1.02	0.970

Table N-48. Minimum and Maximum of  $\phi$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle\phi\rangle$ Mean (deg)	Unfiltered $\phi$		Filtered $\phi$		Filtered $(\phi)^*$	
		Min. (deg)	Max. (deg)	Min. (deg)	Max. (deg)	Min. (1)	Max. (1)
5.	-2.79E-07	-5.00	5.00	-4.95	4.95	-0.990	0.990
15.	-8.78E-07	-15.0	15.0	-14.9	14.9	-0.990	0.990
30.	1.94E-06	-30.0	30.0	-29.9	29.9	-0.996	0.996
45.	5.33E-07	-45.0	45.0	-44.9	44.9	-0.998	0.998
65.	-4.64E-06	-65.0	65.0	-65.0	65.0	-0.999	0.999

# TASK 1/ROLL MOTION/MODEL 5514

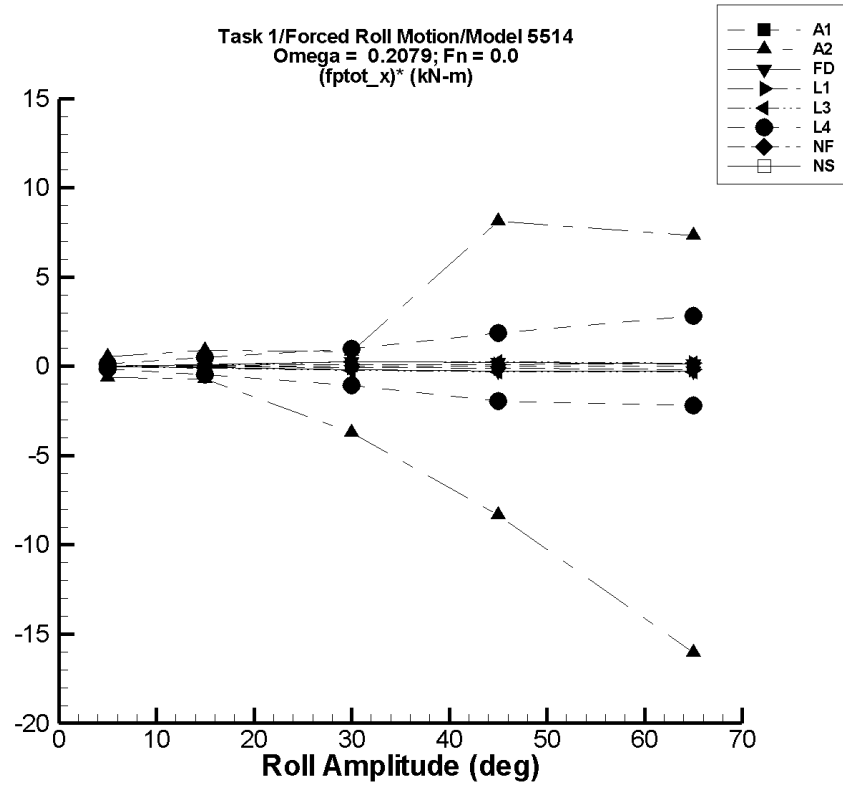


Figure N-7. Minimum and Maximum of  $(F_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N–49. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	Filtered $(F_x^{\text{ptot}})^*$ Max. (kN/°)
5.	-1.89E-05	-9.40E-03	9.46E-03	-2.30E-03	2.32E-03	-4.56E-04	4.67E-04
15.	-5.67E-05	-2.82E-02	2.84E-02	-6.89E-03	6.95E-03	-4.55E-04	4.67E-04
30.	-1.13E-04	-5.64E-02	5.67E-02	-1.38E-02	1.39E-02	-4.55E-04	4.67E-04
45.	-1.70E-04	-8.46E-02	8.51E-02	-2.07E-02	2.09E-02	-4.55E-04	4.67E-04
65.	-2.46E-04	-0.122	0.123	-2.98E-02	3.01E-02	-4.55E-04	4.67E-04

Table N–50. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	Filtered $(F_x^{\text{ptot}})^*$ Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.617	0.528
15.	35.6	24.9	49.4	24.9	48.9	-0.709	0.887
30.	33.7	-748.	69.2	-77.4	58.6	-3.70	0.830
45.	-16.4	-1.20E+03	2.36E+03	-391.	349.	-8.33	8.13
65.	-212.	-1.26E+03	1.76E+03	-1.26E+03	263.	-16.1	7.31

Table N-51. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.55E-02	1.59E-02
15.	-20.3	-21.4	-19.1	-21.4	-19.1	-6.78E-02	8.39E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.00	-0.193	0.252
45.	-9.65	-21.4	0.541	-21.4	0.514	-0.260	0.226
65.	-5.09	-21.4	4.06	-21.3	3.87	-0.250	0.138

Table N-52. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-6.37E-02	-0.128	4.39E-05	-0.127	-5.54E-05	-1.27E-02	1.27E-02
15.	-0.574	-1.15	1.76E-04	-1.15	-7.28E-04	-3.82E-02	3.82E-02
30.	-2.29	-4.59	4.89E-04	-4.59	-3.13E-03	-7.65E-02	7.64E-02
45.	-5.16	-10.3	9.52E-04	-10.3	-7.21E-03	-0.115	0.115
65.	-10.8	-21.6	1.76E-03	-21.5	-1.52E-02	-0.166	0.166

Table N-53. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.5	-16.1	-16.5	-16.2	-4.08E-02	3.49E-02
15.	-16.1	-17.6	-15.0	-17.5	-15.0	-9.52E-02	7.44E-02
30.	-13.9	-21.0	-5.97	-20.9	-5.97	-0.236	0.263
45.	-12.7	-26.7	-0.206	-26.6	-0.385	-0.310	0.273
65.	-18.0	-38.0	-6.20	-37.9	-6.29	-0.306	0.180

Table N-54. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.4	-17.2	-15.6	-17.1	-15.7	-0.141	0.141
15.	-16.3	-23.8	-8.72	-23.2	-9.03	-0.455	0.487
30.	-15.1	-48.9	16.9	-47.7	14.5	-1.09	0.985
45.	-16.4	-111.	70.0	-104.	67.0	-1.94	1.85
65.	-22.1	-193.	184.	-164.	161.	-2.18	2.82

Table N–55. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–56. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—



# TASK 1/ROLL MOTION/MODEL 5514

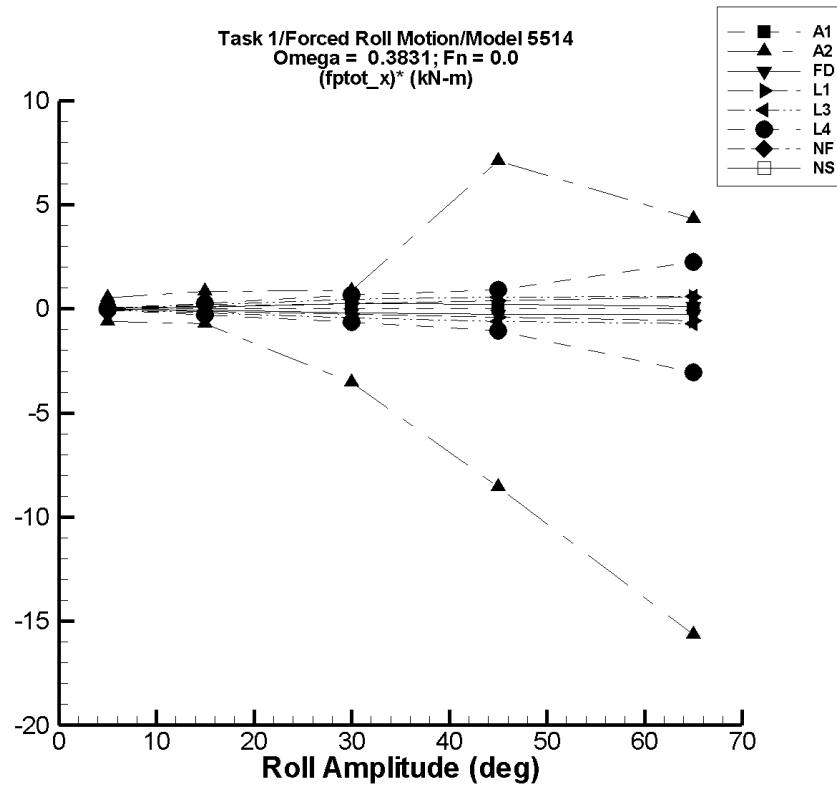


Figure N-8. Minimum and Maximum of  $(F_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N–57. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> ( $F_x^{\text{ptot}})^*$ <b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	-7.56E-05	-1.53E-02	1.14E-02	-8.49E-03	7.50E-03	-1.68E-03	1.52E-03
15.	-2.27E-04	-4.60E-02	3.42E-02	-2.55E-02	2.25E-02	-1.68E-03	1.52E-03
30.	-4.53E-04	-9.20E-02	6.84E-02	-5.09E-02	4.50E-02	-1.68E-03	1.52E-03
45.	-6.80E-04	-0.138	0.103	-7.64E-02	6.75E-02	-1.68E-03	1.52E-03
65.	-9.82E-04	-0.199	0.148	-0.110	9.75E-02	-1.68E-03	1.52E-03

Table N–58. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> ( $F_x^{\text{ptot}})^*$ <b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.620	0.529
15.	35.6	24.9	49.4	25.0	47.9	-0.703	0.823
30.	32.3	-750.	67.2	-73.5	58.1	-3.52	0.862
45.	12.0	-1.20E+03	2.36E+03	-373.	332.	-8.56	7.10
65.	-234.	-1.26E+03	70.2	-1.25E+03	47.9	-15.7	4.33

Table N-59. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.49E-02	1.58E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.51E-02	8.29E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.09	-0.191	0.250
45.	-9.60	-21.4	0.539	-21.3	0.472	-0.260	0.224
65.	-5.02	-21.4	4.05	-21.2	3.38	-0.249	0.129

Table N-60. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.222	-0.444	2.69E-04	-0.444	-9.19E-04	-4.45E-02	4.42E-02
15.	-2.00	-4.00	1.44E-03	-4.00	-9.24E-03	-0.133	0.133
30.	-7.99	-16.0	4.75E-03	-16.0	-3.79E-02	-0.267	0.265
45.	-18.0	-36.0	9.96E-03	-36.0	-8.60E-02	-0.400	0.398
65.	-37.5	-75.1	1.99E-02	-75.1	-0.180	-0.578	0.574

Table N–61. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.5	-16.9	-16.2	-16.8	-16.2	-6.65E-02	6.22E-02
15.	-17.5	-20.4	-15.0	-20.4	-15.0	-0.190	0.169
30.	-19.5	-32.4	-5.97	-32.4	-6.08	-0.428	0.449
45.	-25.5	-52.4	-0.389	-52.4	-0.472	-0.598	0.555
65.	-44.8	-91.5	-6.34	-91.5	-6.45	-0.718	0.590

Table N–62. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.6	-17.3	-15.7	-16.9	-16.3	-5.52E-02	5.23E-02
15.	-18.2	-25.7	-13.3	-22.7	-14.1	-0.306	0.269
30.	-21.1	-49.8	2.41	-39.9	-0.745	-0.626	0.679
45.	-22.0	-81.7	29.9	-68.7	18.2	-1.04	0.893
65.	-36.5	-300.	140.	-234.	109.	-3.04	2.24

Table N-63. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-64. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

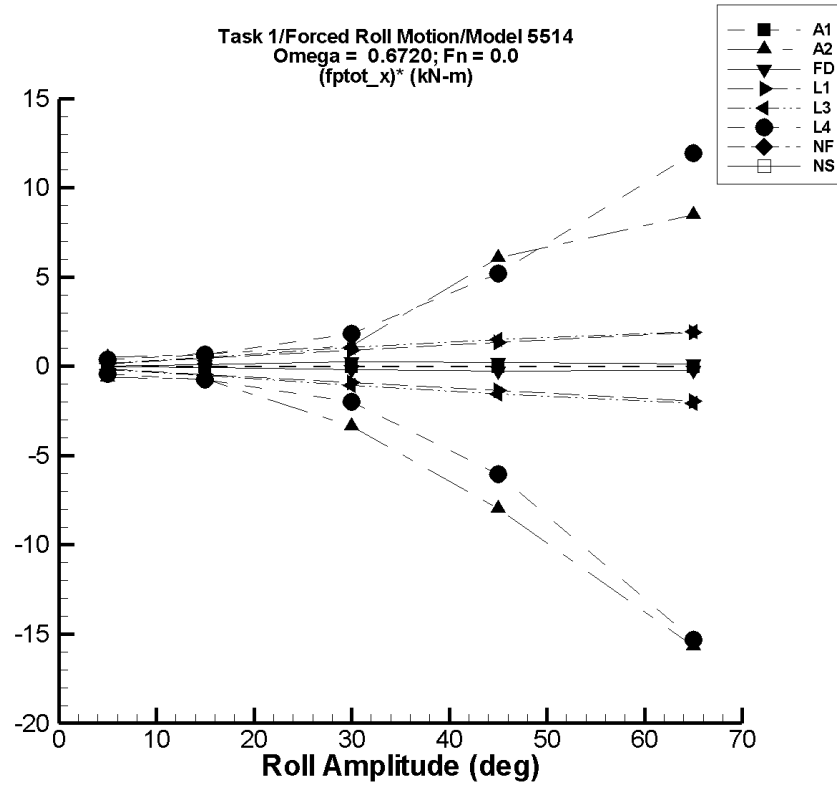


Figure N-9. Minimum and Maximum of  $(F_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-65. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	Filtered $(F_x^{\text{ptot}})^*$ Max. (kN/°)
5.	1.85E-04	-2.69E-02	2.86E-02	-2.65E-02	2.80E-02	-5.33E-03	5.56E-03
15.	5.54E-04	-8.07E-02	8.58E-02	-7.94E-02	8.39E-02	-5.33E-03	5.55E-03
30.	1.11E-03	-0.161	0.172	-0.159	0.168	-5.33E-03	5.55E-03
45.	1.66E-03	-0.242	0.257	-0.238	0.252	-5.33E-03	5.55E-03
65.	2.40E-03	-0.350	0.372	-0.344	0.363	-5.33E-03	5.55E-03

Table N-66. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	Filtered $(F_x^{\text{ptot}})^*$ Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.8	-0.620	0.509
15.	35.6	24.8	49.4	25.0	46.0	-0.701	0.695
30.	28.5	-750.	66.3	-71.8	62.7	-3.34	1.14
45.	5.47	-383.	1.79E+03	-353.	279.	-7.97	6.07
65.	-203.	-1.26E+03	2.36E+03	-1.22E+03	349.	-15.7	8.49

Table N-67. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.23E-02	1.41E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.56E-02	8.06E-02
30.	-15.5	-21.4	-7.97	-21.3	-8.19	-0.192	0.245
45.	-9.68	-21.4	0.538	-21.2	0.365	-0.257	0.223
65.	-5.22	-21.4	4.06	-20.8	2.74	-0.240	0.123

Table N-68. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.774	-1.52	-2.42E-02	-1.52	-3.64E-02	-0.150	0.148
15.	-6.97	-13.7	-0.219	-13.7	-0.329	-0.450	0.443
30.	-27.9	-54.9	-0.876	-54.9	-1.32	-0.901	0.885
45.	-62.7	-123.	-1.97	-123.	-2.97	-1.35	1.33
65.	-131.	-258.	-4.12	-258.	-6.20	-1.95	1.92



Table N–69. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-17.0	-17.9	-16.2	-17.9	-16.2	-0.167	0.164
15.	-22.5	-30.1	-15.2	-30.1	-15.3	-0.507	0.478
30.	-39.4	-71.3	-6.86	-71.3	-7.36	-1.06	1.07
45.	-70.2	-140.	-2.37	-140.	-3.39	-1.55	1.49
65.	-138.	-274.	-10.5	-274.	-12.5	-2.09	1.93

Table N–70. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-17.1	-21.9	-14.1	-19.2	-15.2	-0.419	0.381
15.	-23.8	-42.4	-8.82	-35.0	-14.0	-0.748	0.654
30.	-44.1	-121.	34.0	-104.	11.0	-1.98	1.84
45.	-70.8	-412.	239.	-343.	164.	-6.05	5.21
65.	-155.	-1.31E+03	760.	-1.15E+03	620.	-15.3	11.9

Table N-71. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-72. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

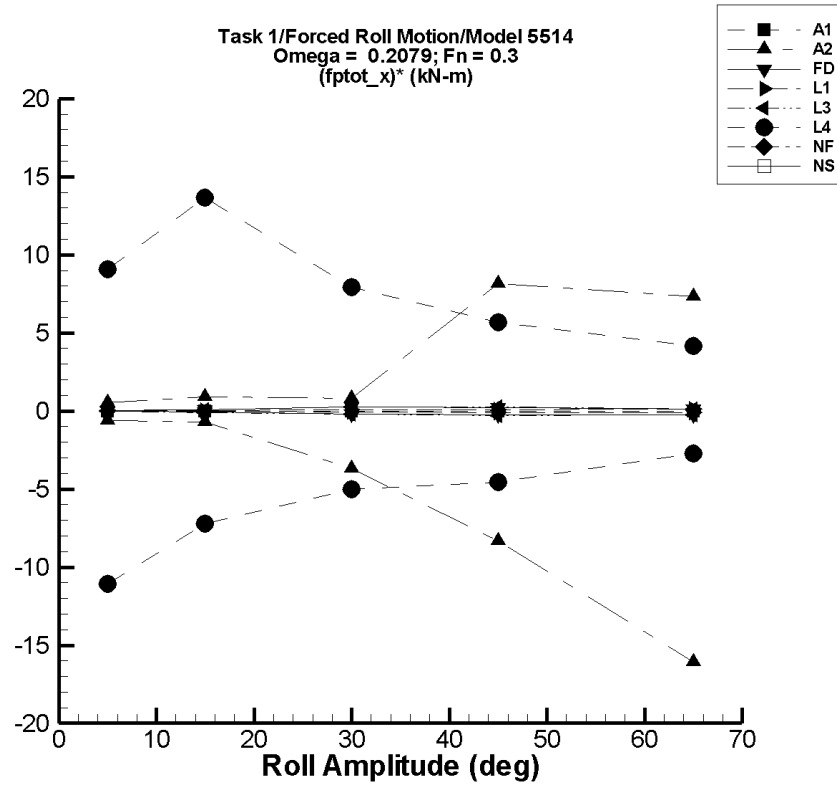


Figure N-10. Minimum and Maximum of  $(F_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-73. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> $(F_x^{\text{ptot}})^*$ <b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	-1.51E-05	-2.10E-02	2.07E-02	-1.03E-02	1.02E-02	-2.06E-03	2.05E-03
15.	-4.52E-05	-6.29E-02	6.21E-02	-3.09E-02	3.07E-02	-2.05E-03	2.05E-03
30.	-9.04E-05	-0.126	0.124	-6.17E-02	6.13E-02	-2.05E-03	2.05E-03
45.	-1.36E-04	-0.189	0.186	-9.26E-02	9.20E-02	-2.05E-03	2.05E-03
65.	-1.96E-04	-0.272	0.269	-0.134	0.133	-2.05E-03	2.05E-03

Table N-74. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> $(F_x^{\text{ptot}})^*$ <b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.618	0.529
15.	35.6	24.8	49.4	24.9	48.9	-0.711	0.888
30.	33.7	-748.	69.2	-77.3	58.7	-3.70	0.831
45.	-16.4	-1.20E+03	2.36E+03	-391.	350.	-8.33	8.13
65.	-212.	-1.26E+03	1.76E+03	-1.26E+03	263.	-16.1	7.31

Table N-75. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.55E-02	1.59E-02
15.	-20.3	-21.4	-19.1	-21.4	-19.1	-6.78E-02	8.39E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.00	-0.193	0.252
45.	-9.65	-21.4	0.541	-21.4	0.514	-0.260	0.226
65.	-5.09	-21.4	4.06	-21.3	3.87	-0.250	0.138

Table N-76. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-1.99E-02	1.67E-02
15.	-332.	-333.	-332.	-333.	-332.	-3.10E-02	2.95E-02
30.	-333.	-335.	-332.	-335.	-332.	-5.74E-02	5.71E-02
45.	-335.	-339.	-331.	-339.	-332.	-8.53E-02	8.53E-02
65.	-339.	-347.	-331.	-347.	-331.	-0.123	0.123

Table N-77. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-348.	-348.	-348.	-348.	-348.	-3.85E-02	3.41E-02
15.	-348.	-349.	-347.	-349.	-347.	-8.58E-02	6.46E-02
30.	-345.	-352.	-338.	-351.	-338.	-0.216	0.242
45.	-343.	-356.	-331.	-356.	-332.	-0.280	0.252
65.	-347.	-364.	-337.	-363.	-337.	-0.260	0.140

Table N-78. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-321.	-388.	-102.	-377.	-276.	-11.1	9.06
15.	-300.	-433.	10.6	-408.	-94.3	-7.23	13.7
30.	-309.	-529.	-17.7	-460.	-71.3	-5.04	7.91
45.	-313.	-597.	11.8	-517.	-58.1	-4.54	5.67
65.	-304.	-761.	129.	-482.	-33.1	-2.73	4.17

Table N-79. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-80. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

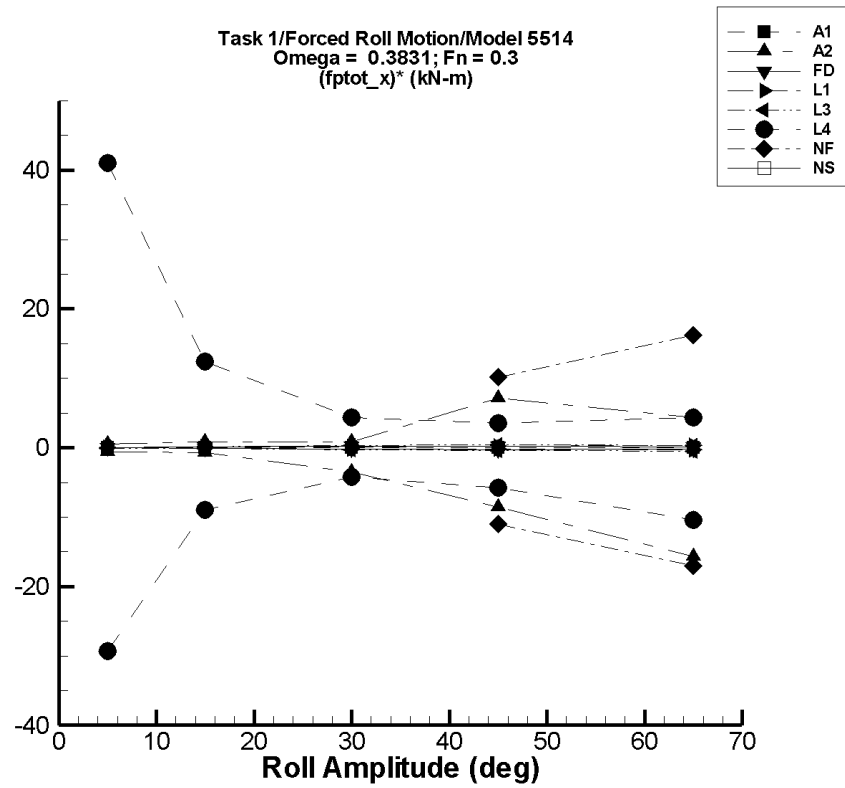


Figure N-11. Minimum and Maximum of  $(F_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.



Table N–81. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered $(F_x^{\text{ptot}})^*$ Min. (kN/°)	Max. (kN/°)
5.	1.41E-04	-2.00E-02	1.70E-02	-9.10E-03	7.50E-03	-1.85E-03	1.47E-03
15.	4.22E-04	-5.98E-02	5.09E-02	-2.73E-02	2.25E-02	-1.85E-03	1.47E-03
30.	8.44E-04	-0.120	0.102	-5.46E-02	4.50E-02	-1.85E-03	1.47E-03
45.	1.27E-03	-0.179	0.153	-8.19E-02	6.75E-02	-1.85E-03	1.47E-03
65.	1.83E-03	-0.259	0.221	-0.118	9.74E-02	-1.85E-03	1.47E-03

Table N–82. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered $(F_x^{\text{ptot}})^*$ Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.619	0.526
15.	35.6	24.9	49.4	25.0	47.9	-0.703	0.823
30.	32.3	-750.	67.3	-73.4	58.2	-3.52	0.865
45.	12.0	-1.20E+03	2.36E+03	-373.	332.	-8.56	7.11
65.	-234.	-1.26E+03	70.3	-1.25E+03	47.9	-15.7	4.33

Table N-83. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.49E-02	1.58E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.51E-02	8.29E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.09	-0.191	0.250
45.	-9.60	-21.4	0.538	-21.3	0.472	-0.260	0.224
65.	-5.02	-21.4	4.05	-21.2	3.38	-0.249	0.129

Table N-84. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-3.18E-02	2.89E-02
15.	-333.	-334.	-331.	-334.	-332.	-7.84E-02	7.91E-02
30.	-336.	-341.	-331.	-341.	-331.	-0.157	0.157
45.	-341.	-352.	-330.	-352.	-330.	-0.235	0.236
65.	-351.	-373.	-329.	-373.	-329.	-0.340	0.340

Table N-85. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-348.	-348.	-348.	-348.	-348.	-4.64E-02	4.80E-02
15.	-348.	-350.	-347.	-350.	-347.	-0.133	0.114
30.	-348.	-357.	-337.	-357.	-337.	-0.314	0.339
45.	-349.	-368.	-330.	-368.	-331.	-0.426	0.396
65.	-359.	-389.	-335.	-389.	-335.	-0.469	0.359

Table N-86. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-309.	-495.	39.9	-455.	-104.	-29.3	41.0
15.	-286.	-460.	14.1	-420.	-99.8	-8.96	12.4
30.	-293.	-486.	-45.6	-421.	-163.	-4.27	4.32
45.	-314.	-660.	-28.8	-575.	-157.	-5.82	3.48
65.	-341.	-1.25E+03	131.	-1.02E+03	-61.4	-10.5	4.31

Table N-87. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	Filtered $(F_x^{\text{ptot}})^*$ Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	-499.	-655.	-313.	-647.	-338.	-4.92	5.36
45.	-660.	-1.19E+03	-164.	-1.16E+03	-205.	-11.1	10.1
65.	-971.	-2.17E+03	125.	-2.08E+03	81.5	-17.1	16.2

Table N-88. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	Filtered $(F_x^{\text{ptot}})^*$ Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

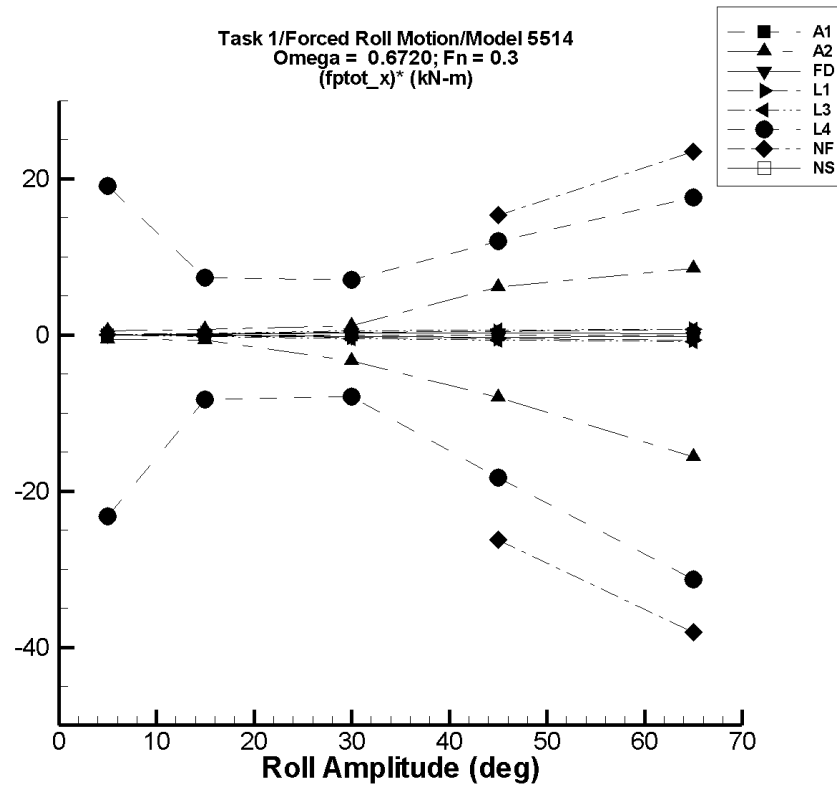


Figure N-12. Minimum and Maximum of  $(F_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N–89. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> $(F_x^{\text{ptot}})^*$ <b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	-2.65E-05	-2.59E-02	1.96E-02	-1.76E-02	1.73E-02	-3.52E-03	3.46E-03
15.	-7.96E-05	-7.78E-02	5.87E-02	-5.29E-02	5.17E-02	-3.52E-03	3.45E-03
30.	-1.59E-04	-0.156	0.117	-0.106	0.103	-3.52E-03	3.45E-03
45.	-2.39E-04	-0.233	0.176	-0.159	0.155	-3.52E-03	3.45E-03
65.	-3.45E-04	-0.337	0.254	-0.229	0.224	-3.52E-03	3.45E-03

Table N–90. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> <b>Min.</b> (kN)	$F_x^{\text{ptot}}$ <b>Max.</b> (kN)	<b>Filtered</b> $(F_x^{\text{ptot}})^*$ <b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	43.3	40.2	45.9	40.2	45.8	-0.615	0.508
15.	35.6	24.9	49.4	25.0	46.0	-0.701	0.695
30.	28.5	-749.	66.5	-71.5	62.9	-3.33	1.15
45.	5.47	-383.	1.79E+03	-353.	279.	-7.97	6.08
65.	-203.	-1.26E+03	2.36E+03	-1.22E+03	349.	-15.7	8.50

Table N-91. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.23E-02	1.42E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.56E-02	8.06E-02
30.	-15.5	-21.4	-7.97	-21.3	-8.18	-0.192	0.245
45.	-9.68	-21.4	0.537	-21.2	0.365	-0.257	0.223
65.	-5.22	-21.4	4.06	-20.8	2.74	-0.240	0.123

Table N-92. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-5.58E-02	5.28E-02
15.	-334.	-337.	-332.	-337.	-332.	-0.157	0.157
30.	-343.	-352.	-333.	-352.	-333.	-0.314	0.313
45.	-356.	-378.	-335.	-378.	-335.	-0.471	0.470
65.	-383.	-428.	-338.	-427.	-339.	-0.680	0.679

Table N-93. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-348.	-349.	-348.	-349.	-348.	-7.00E-02	7.05E-02
15.	-350.	-353.	-347.	-353.	-347.	-0.212	0.192
30.	-354.	-369.	-339.	-369.	-339.	-0.474	0.495
45.	-364.	-394.	-335.	-394.	-335.	-0.664	0.635
65.	-390.	-444.	-344.	-444.	-345.	-0.816	0.699

Table N-94. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-288.	-427.	-62.6	-404.	-192.	-23.2	19.1
15.	-263.	-446.	-47.1	-388.	-153.	-8.31	7.34
30.	-333.	-660.	3.91	-571.	-122.	-7.94	7.04
45.	-402.	-1.49E+03	269.	-1.23E+03	138.	-18.3	12.0
65.	-398.	-2.73E+03	873.	-2.43E+03	744.	-31.3	17.6



Table N-95. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	-744.	-1.20E+03	-310.	-1.18E+03	-394.	-14.4	11.7
45.	-927.	-2.24E+03	-155.	-2.11E+03	-238.	-26.3	15.3
65.	-1.33E+03	-4.38E+03	360.	-3.81E+03	197.	-38.1	23.5

Table N-96. Minimum and Maximum of  $F_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{ptot}}$		Filtered $F_x^{\text{ptot}}$		Filtered $(F_x^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

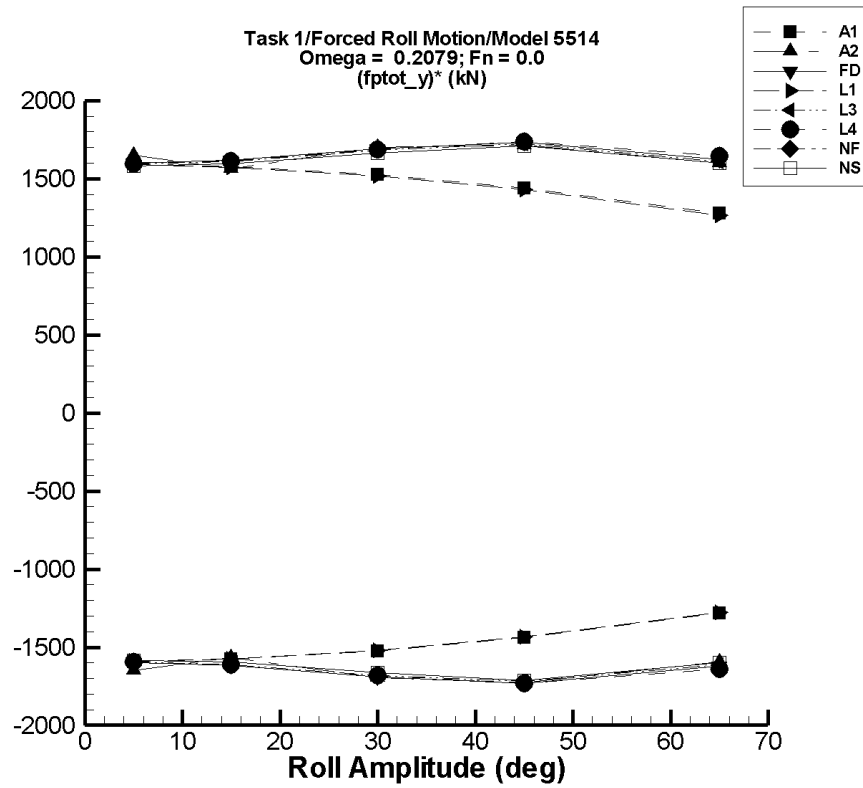


Figure N-13. Minimum and Maximum of  $(F_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-97. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.100	-7.97E+03	7.97E+03	-7.97E+03	7.98E+03	-1.59E+03	1.60E+03
15.	1.82	-2.37E+04	2.37E+04	-2.36E+04	2.37E+04	-1.58E+03	1.58E+03
30.	13.8	-4.58E+04	4.58E+04	-4.57E+04	4.58E+04	-1.52E+03	1.53E+03
45.	45.2	-6.47E+04	6.47E+04	-6.47E+04	6.48E+04	-1.44E+03	1.44E+03
65.	131.	-8.31E+04	8.31E+04	-8.31E+04	8.32E+04	-1.28E+03	1.28E+03

Table N-98. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.31	-8.26E+03	8.26E+03	-8.25E+03	8.26E+03	-1.65E+03	1.65E+03
15.	10.4	-2.35E+04	2.35E+04	-2.35E+04	2.35E+04	-1.56E+03	1.56E+03
30.	-1.07	-5.09E+04	5.09E+04	-5.09E+04	5.10E+04	-1.70E+03	1.70E+03
45.	0.147	-7.71E+04	7.74E+04	-7.77E+04	7.71E+04	-1.73E+03	1.71E+03
65.	-94.4	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.60E+03	1.60E+03

Table N–99. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.73E-03	-8.01E+03	8.01E+03	-8.00E+03	8.00E+03	-1.60E+03	1.60E+03
15.	-2.14	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-21.1	-5.08E+04	5.08E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-42.4	-7.80E+04	7.80E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	18.4	-1.06E+05	1.06E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N–100. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.151	-7.95E+03	7.95E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	4.16	-2.36E+04	2.36E+04	-2.36E+04	2.36E+04	-1.57E+03	1.57E+03
30.	32.8	-4.56E+04	4.56E+04	-4.56E+04	4.56E+04	-1.52E+03	1.52E+03
45.	108.	-6.45E+04	6.45E+04	-6.45E+04	6.45E+04	-1.44E+03	1.43E+03
65.	314.	-8.26E+04	8.26E+04	-8.26E+04	8.26E+04	-1.28E+03	1.27E+03

Table N–101. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.142	-7.97E+03	7.97E+03	-7.97E+03	7.97E+03	-1.59E+03	1.59E+03
15.	-4.33	-2.42E+04	2.42E+04	-2.42E+04	2.42E+04	-1.61E+03	1.61E+03
30.	-42.2	-5.04E+04	5.04E+04	-5.04E+04	5.04E+04	-1.68E+03	1.68E+03
45.	-80.8	-7.75E+04	7.75E+04	-7.75E+04	7.75E+04	-1.72E+03	1.72E+03
65.	81.8	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.61E+03	1.61E+03

Table N–102. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.248	-7.97E+03	7.97E+03	-7.97E+03	7.97E+03	-1.59E+03	1.59E+03
15.	-7.33	-2.42E+04	2.42E+04	-2.42E+04	2.42E+04	-1.61E+03	1.61E+03
30.	-70.2	-5.06E+04	5.06E+04	-5.05E+04	5.05E+04	-1.68E+03	1.69E+03
45.	-199.	-7.81E+04	7.81E+04	-7.81E+04	7.81E+04	-1.73E+03	1.74E+03
65.	-130.	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.64E+03	1.64E+03

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Table N-103. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-104. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.73E-03	-7.99E+03	7.99E+03	-7.91E+03	7.91E+03	-1.58E+03	1.58E+03
15.	8.39E-02	-2.42E+04	2.42E+04	-2.39E+04	2.39E+04	-1.59E+03	1.59E+03
30.	0.808	-5.01E+04	5.01E+04	-4.99E+04	4.99E+04	-1.66E+03	1.66E+03
45.	2.89	-7.72E+04	7.71E+04	-7.70E+04	7.70E+04	-1.71E+03	1.71E+03
65.	97.4	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.60E+03	1.60E+03

# TASK 1/ROLL MOTION/MODEL 5514

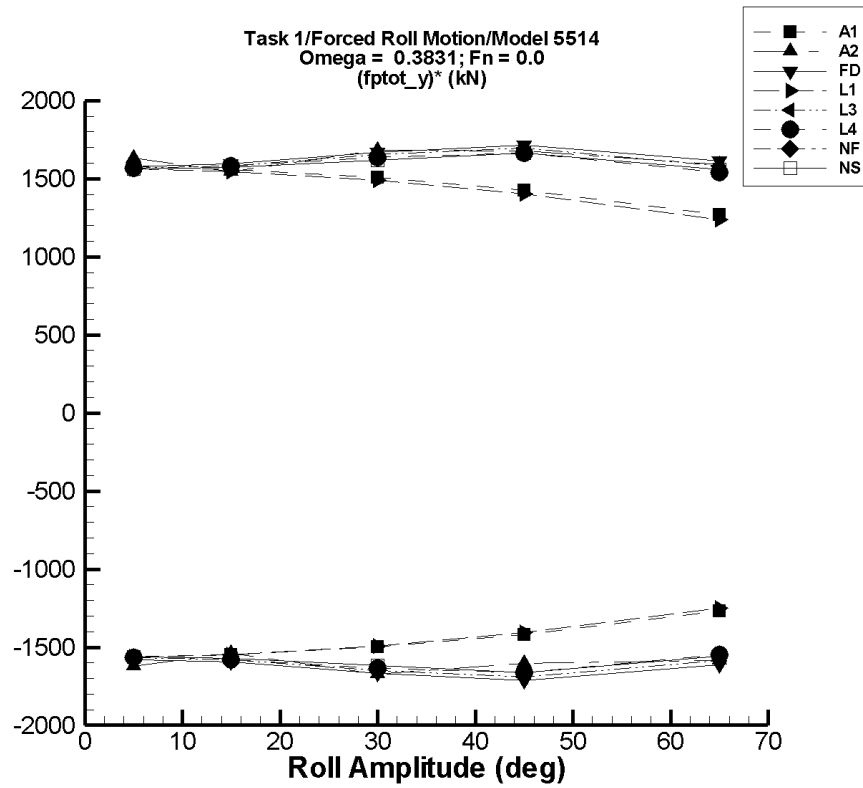


Figure N-14. Minimum and Maximum of  $(F_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-105. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.205	-7.85E+03	7.86E+03	-7.82E+03	7.88E+03	-1.56E+03	1.58E+03
15.	1.80	-2.33E+04	2.33E+04	-2.32E+04	2.34E+04	-1.55E+03	1.56E+03
30.	11.5	-4.51E+04	4.52E+04	-4.50E+04	4.53E+04	-1.50E+03	1.51E+03
45.	36.6	-6.40E+04	6.40E+04	-6.38E+04	6.42E+04	-1.42E+03	1.43E+03
65.	105.	-8.24E+04	8.25E+04	-8.23E+04	8.28E+04	-1.27E+03	1.27E+03

Table N-106. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.35	-8.14E+03	8.15E+03	-8.11E+03	8.17E+03	-1.62E+03	1.63E+03
15.	10.2	-2.31E+04	2.32E+04	-2.30E+04	2.32E+04	-1.54E+03	1.55E+03
30.	17.8	-5.03E+04	5.03E+04	-5.01E+04	5.05E+04	-1.67E+03	1.68E+03
45.	1.00E+03	-7.63E+04	7.64E+04	-7.12E+04	7.66E+04	-1.61E+03	1.68E+03
65.	-25.9	-1.03E+05	1.03E+05	-1.03E+05	1.03E+05	-1.58E+03	1.59E+03



Table N–107. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.49E-02	-7.92E+03	7.92E+03	-7.89E+03	7.89E+03	-1.58E+03	1.58E+03
15.	-2.23	-2.40E+04	2.40E+04	-2.39E+04	2.39E+04	-1.60E+03	1.60E+03
30.	-22.0	-5.03E+04	5.03E+04	-5.01E+04	5.01E+04	-1.67E+03	1.67E+03
45.	-34.2	-7.74E+04	7.74E+04	-7.71E+04	7.71E+04	-1.71E+03	1.71E+03
65.	43.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.61E+03	1.61E+03

Table N–108. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.198	-7.82E+03	7.82E+03	-7.81E+03	7.81E+03	-1.56E+03	1.56E+03
15.	4.26	-2.32E+04	2.32E+04	-2.32E+04	2.32E+04	-1.55E+03	1.55E+03
30.	32.3	-4.48E+04	4.48E+04	-4.48E+04	4.48E+04	-1.49E+03	1.49E+03
45.	106.	-6.33E+04	6.33E+04	-6.32E+04	6.32E+04	-1.41E+03	1.40E+03
65.	306.	-8.09E+04	8.09E+04	-8.08E+04	8.08E+04	-1.25E+03	1.24E+03

Table N–109. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.04E-02	-7.84E+03	7.84E+03	-7.83E+03	7.83E+03	-1.57E+03	1.57E+03
15.	-3.95	-2.38E+04	2.38E+04	-2.37E+04	2.37E+04	-1.58E+03	1.58E+03
30.	-40.4	-4.96E+04	4.96E+04	-4.96E+04	4.96E+04	-1.65E+03	1.65E+03
45.	-85.0	-7.63E+04	7.63E+04	-7.62E+04	7.62E+04	-1.69E+03	1.69E+03
65.	62.3	-1.03E+05	1.03E+05	-1.03E+05	1.03E+05	-1.58E+03	1.58E+03

Table N–110. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.104	-7.84E+03	7.84E+03	-7.83E+03	7.83E+03	-1.57E+03	1.57E+03
15.	-4.64	-2.37E+04	2.37E+04	-2.37E+04	2.37E+04	-1.58E+03	1.58E+03
30.	-48.2	-4.92E+04	4.92E+04	-4.91E+04	4.91E+04	-1.64E+03	1.64E+03
45.	-55.9	-7.49E+04	7.49E+04	-7.48E+04	7.48E+04	-1.66E+03	1.66E+03
65.	299.	-1.01E+05	1.01E+05	-1.00E+05	1.00E+05	-1.55E+03	1.54E+03

Table N-111. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-112. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.66E-03	-7.89E+03	7.89E+03	-7.81E+03	7.81E+03	-1.56E+03	1.56E+03
15.	-9.76E-02	-2.38E+04	2.38E+04	-2.36E+04	2.36E+04	-1.57E+03	1.57E+03
30.	-0.832	-4.87E+04	4.87E+04	-4.86E+04	4.86E+04	-1.62E+03	1.62E+03
45.	-2.66	-7.50E+04	7.50E+04	-7.49E+04	7.49E+04	-1.66E+03	1.66E+03
65.	68.5	-1.01E+05	1.01E+05	-1.01E+05	1.01E+05	-1.56E+03	1.56E+03

# Task 1/ROLL MOTION/MODEL 5514

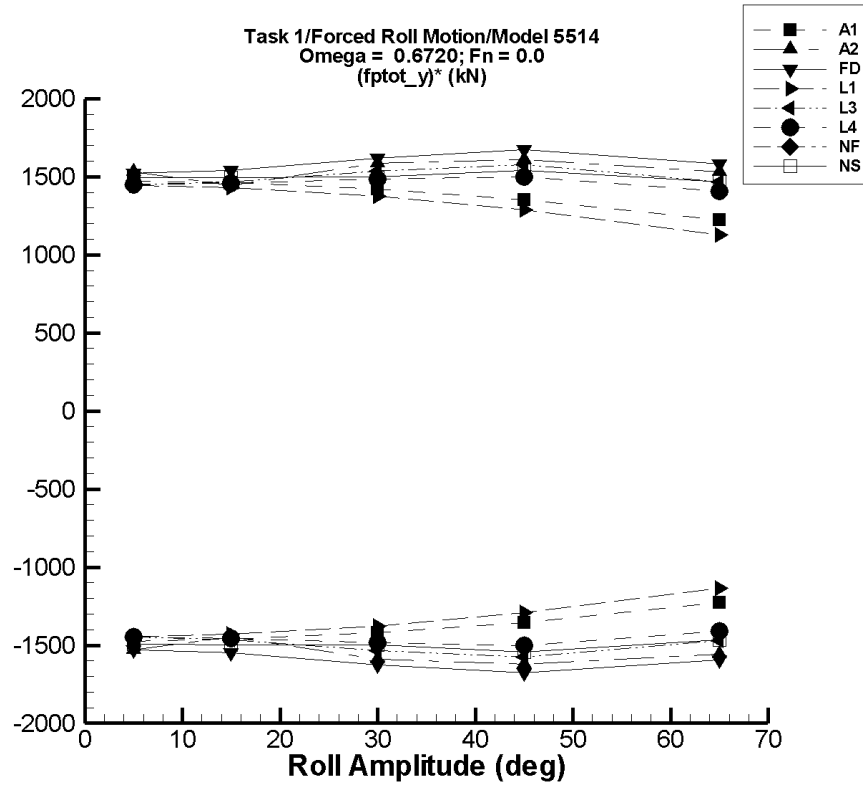


Figure N-15. Minimum and Maximum of  $(F_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N–113. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$	$\langle F_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>F_y^{\text{ptot}}</math></b>		<b>Filtered <math>F_y^{\text{ptot}}</math></b>		<b>Filtered <math>(F_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN/°)</b>	<b>(kN/°)</b>
5.	-0.138	-7.45E+03	7.45E+03	-7.37E+03	7.37E+03	-1.47E+03	1.47E+03
15.	1.91	-2.22E+04	2.22E+04	-2.19E+04	2.19E+04	-1.46E+03	1.46E+03
30.	19.3	-4.30E+04	4.30E+04	-4.26E+04	4.26E+04	-1.42E+03	1.42E+03
45.	66.5	-6.14E+04	6.14E+04	-6.08E+04	6.08E+04	-1.35E+03	1.35E+03
65.	197.	-8.02E+04	8.02E+04	-7.97E+04	7.97E+04	-1.23E+03	1.22E+03

Table N–114. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$	$\langle F_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>F_y^{\text{ptot}}</math></b>		<b>Filtered <math>F_y^{\text{ptot}}</math></b>		<b>Filtered <math>(F_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN/°)</b>	<b>(kN/°)</b>
5.	1.95	-7.74E+03	7.74E+03	-7.65E+03	7.65E+03	-1.53E+03	1.53E+03
15.	13.6	-2.20E+04	2.20E+04	-2.17E+04	2.17E+04	-1.45E+03	1.45E+03
30.	8.67	-4.82E+04	4.82E+04	-4.77E+04	4.76E+04	-1.59E+03	1.59E+03
45.	430.	-7.37E+04	7.37E+04	-7.25E+04	7.28E+04	-1.62E+03	1.61E+03
65.	641.	-1.01E+05	1.01E+05	-1.01E+05	1.00E+05	-1.56E+03	1.53E+03

Table N-115. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-6.30E-02	-7.70E+03	7.70E+03	-7.66E+03	7.61E+03	-1.53E+03	1.52E+03
15.	-6.22	-2.34E+04	2.34E+04	-2.33E+04	2.31E+04	-1.55E+03	1.54E+03
30.	-59.8	-4.92E+04	4.92E+04	-4.88E+04	4.85E+04	-1.63E+03	1.62E+03
45.	-104.	-7.60E+04	7.60E+04	-7.56E+04	7.51E+04	-1.68E+03	1.67E+03
65.	80.6	-1.04E+05	1.04E+05	-1.04E+05	1.03E+05	-1.60E+03	1.58E+03

Table N-116. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.316	-7.26E+03	7.26E+03	-7.23E+03	7.23E+03	-1.45E+03	1.45E+03
15.	4.65	-2.15E+04	2.15E+04	-2.14E+04	2.14E+04	-1.43E+03	1.43E+03
30.	33.8	-4.14E+04	4.14E+04	-4.13E+04	4.13E+04	-1.38E+03	1.38E+03
45.	110.	-5.82E+04	5.82E+04	-5.80E+04	5.80E+04	-1.29E+03	1.29E+03
65.	315.	-7.36E+04	7.36E+04	-7.34E+04	7.34E+04	-1.13E+03	1.13E+03

Table N-117. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.59E-02	-7.27E+03	7.27E+03	-7.24E+03	7.24E+03	-1.45E+03	1.45E+03
15.	-3.83	-2.21E+04	2.21E+04	-2.20E+04	2.20E+04	-1.47E+03	1.47E+03
30.	-41.3	-4.62E+04	4.63E+04	-4.60E+04	4.60E+04	-1.53E+03	1.54E+03
45.	-72.2	-7.12E+04	7.12E+04	-7.09E+04	7.09E+04	-1.57E+03	1.58E+03
65.	97.8	-9.57E+04	9.57E+04	-9.55E+04	9.55E+04	-1.47E+03	1.47E+03

Table N-118. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.61E-02	-7.27E+03	7.27E+03	-7.24E+03	7.25E+03	-1.45E+03	1.45E+03
15.	3.75	-2.19E+04	2.20E+04	-2.19E+04	2.19E+04	-1.46E+03	1.46E+03
30.	-19.2	-4.49E+04	4.48E+04	-4.45E+04	4.45E+04	-1.48E+03	1.48E+03
45.	197.	-6.82E+04	6.81E+04	-6.74E+04	6.76E+04	-1.50E+03	1.50E+03
65.	801.	-9.15E+04	9.45E+04	-9.09E+04	9.22E+04	-1.41E+03	1.41E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N–119. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–120. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.273	-7.54E+03	7.55E+03	-7.47E+03	7.47E+03	-1.49E+03	1.49E+03
15.	0.490	-2.27E+04	2.27E+04	-2.24E+04	2.24E+04	-1.50E+03	1.50E+03
30.	-1.92	-4.51E+04	4.51E+04	-4.50E+04	4.50E+04	-1.50E+03	1.50E+03
45.	-9.64	-6.95E+04	6.95E+04	-6.94E+04	6.94E+04	-1.54E+03	1.54E+03
65.	25.5	-9.61E+04	9.55E+04	-9.53E+04	9.55E+04	-1.47E+03	1.47E+03



# TASK 1/ROLL MOTION/MODEL 5514

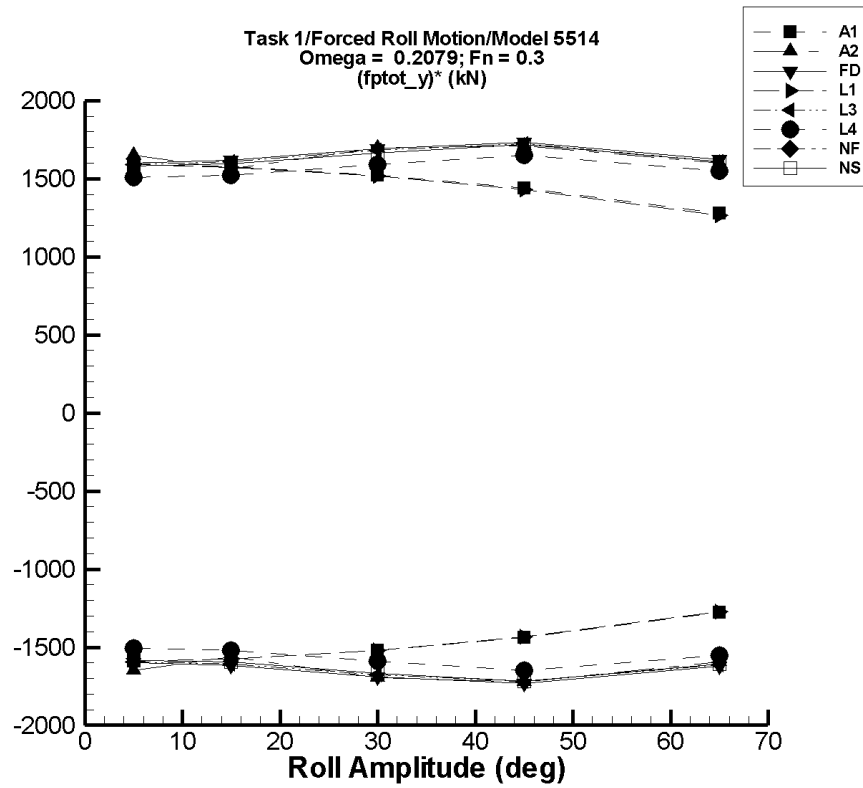


Figure N-16. Minimum and Maximum of  $(F_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N–121. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.108	-7.96E+03	7.96E+03	-7.95E+03	7.96E+03	-1.59E+03	1.59E+03
15.	1.83	-2.36E+04	2.36E+04	-2.36E+04	2.36E+04	-1.57E+03	1.58E+03
30.	13.7	-4.57E+04	4.57E+04	-4.56E+04	4.57E+04	-1.52E+03	1.52E+03
45.	44.7	-6.47E+04	6.47E+04	-6.46E+04	6.47E+04	-1.44E+03	1.44E+03
65.	129.	-8.30E+04	8.30E+04	-8.30E+04	8.32E+04	-1.28E+03	1.28E+03

Table N–122. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.35	-8.25E+03	8.24E+03	-8.24E+03	8.25E+03	-1.65E+03	1.65E+03
15.	10.4	-2.34E+04	2.34E+04	-2.34E+04	2.34E+04	-1.56E+03	1.56E+03
30.	-1.16	-5.09E+04	5.09E+04	-5.08E+04	5.09E+04	-1.69E+03	1.70E+03
45.	-0.358	-7.70E+04	7.74E+04	-7.76E+04	7.70E+04	-1.72E+03	1.71E+03
65.	-96.1	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.59E+03	1.60E+03

Table N–123. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.82E-03	-8.01E+03	8.01E+03	-8.00E+03	8.00E+03	-1.60E+03	1.60E+03
15.	-2.14	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-21.1	-5.08E+04	5.08E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-42.4	-7.80E+04	7.80E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	18.4	-1.06E+05	1.06E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N–124. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.119	-7.95E+03	7.95E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	4.12	-2.36E+04	2.36E+04	-2.36E+04	2.36E+04	-1.57E+03	1.57E+03
30.	32.7	-4.56E+04	4.56E+04	-4.56E+04	4.56E+04	-1.52E+03	1.52E+03
45.	108.	-6.45E+04	6.45E+04	-6.44E+04	6.44E+04	-1.43E+03	1.43E+03
65.	314.	-8.25E+04	8.25E+04	-8.25E+04	8.25E+04	-1.27E+03	1.26E+03

Table N-125. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.187	-7.97E+03	7.97E+03	-7.97E+03	7.97E+03	-1.59E+03	1.59E+03
15.	-4.38	-2.42E+04	2.42E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	-42.3	-5.04E+04	5.04E+04	-5.04E+04	5.04E+04	-1.68E+03	1.68E+03
45.	-80.9	-7.74E+04	7.74E+04	-7.74E+04	7.74E+04	-1.72E+03	1.72E+03
65.	81.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.61E+03	1.61E+03

Table N-126. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.88	-7.54E+03	7.55E+03	-7.54E+03	7.55E+03	-1.51E+03	1.51E+03
15.	-12.7	-2.28E+04	2.28E+04	-2.28E+04	2.28E+04	-1.52E+03	1.52E+03
30.	-50.9	-4.79E+04	4.78E+04	-4.78E+04	4.77E+04	-1.59E+03	1.59E+03
45.	-109.	-7.43E+04	7.43E+04	-7.42E+04	7.42E+04	-1.65E+03	1.65E+03
65.	92.5	-1.01E+05	1.01E+05	-1.01E+05	1.01E+05	-1.55E+03	1.55E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-127. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-128. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.93E-03	-7.99E+03	7.99E+03	-7.91E+03	7.91E+03	-1.58E+03	1.58E+03
15.	6.05E-02	-2.42E+04	2.42E+04	-2.39E+04	2.39E+04	-1.60E+03	1.60E+03
30.	0.692	-5.02E+04	5.02E+04	-5.00E+04	5.00E+04	-1.67E+03	1.67E+03
45.	2.41	-7.74E+04	7.74E+04	-7.73E+04	7.73E+04	-1.72E+03	1.72E+03
65.	78.7	-1.04E+05	1.05E+05	-1.04E+05	1.05E+05	-1.61E+03	1.61E+03

# Task 1/ROLL MOTION/MODEL 5514

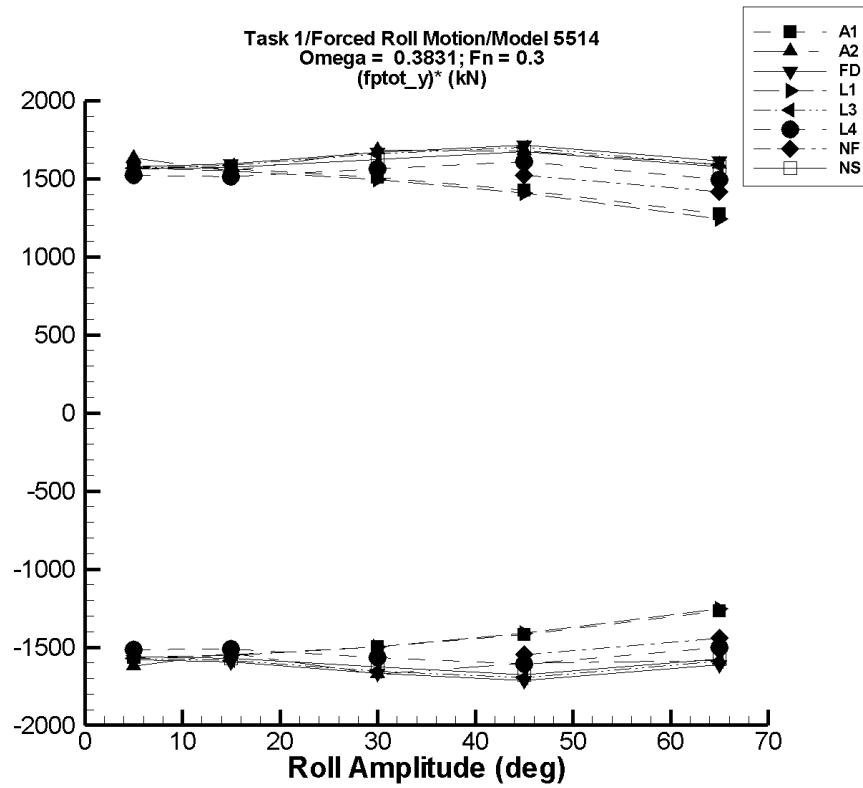


Figure N-17. Minimum and Maximum of  $(F_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N–129. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.310	-7.85E+03	7.86E+03	-7.82E+03	7.89E+03	-1.56E+03	1.58E+03
15.	2.08	-2.33E+04	2.33E+04	-2.32E+04	2.34E+04	-1.55E+03	1.56E+03
30.	11.8	-4.51E+04	4.52E+04	-4.50E+04	4.53E+04	-1.50E+03	1.51E+03
45.	36.1	-6.40E+04	6.40E+04	-6.38E+04	6.42E+04	-1.42E+03	1.43E+03
65.	102.	-8.24E+04	8.25E+04	-8.23E+04	8.28E+04	-1.27E+03	1.27E+03

Table N–130. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.45	-8.14E+03	8.15E+03	-8.11E+03	8.17E+03	-1.62E+03	1.63E+03
15.	10.4	-2.31E+04	2.32E+04	-2.30E+04	2.32E+04	-1.54E+03	1.55E+03
30.	18.0	-5.03E+04	5.04E+04	-5.01E+04	5.05E+04	-1.67E+03	1.68E+03
45.	1.00E+03	-7.63E+04	7.64E+04	-7.12E+04	7.66E+04	-1.60E+03	1.68E+03
65.	-28.5	-1.03E+05	1.03E+05	-1.03E+05	1.04E+05	-1.58E+03	1.59E+03

Table N–131. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.47E-02	-7.92E+03	7.92E+03	-7.89E+03	7.89E+03	-1.58E+03	1.58E+03
15.	-2.23	-2.40E+04	2.40E+04	-2.39E+04	2.39E+04	-1.60E+03	1.60E+03
30.	-22.0	-5.03E+04	5.03E+04	-5.01E+04	5.01E+04	-1.67E+03	1.67E+03
45.	-34.2	-7.74E+04	7.74E+04	-7.71E+04	7.71E+04	-1.71E+03	1.71E+03
65.	43.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.61E+03	1.61E+03

Table N–132. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.169	-7.84E+03	7.84E+03	-7.83E+03	7.83E+03	-1.57E+03	1.57E+03
15.	4.22	-2.33E+04	2.33E+04	-2.33E+04	2.33E+04	-1.55E+03	1.55E+03
30.	32.2	-4.50E+04	4.50E+04	-4.49E+04	4.49E+04	-1.50E+03	1.50E+03
45.	106.	-6.35E+04	6.35E+04	-6.34E+04	6.34E+04	-1.41E+03	1.41E+03
65.	306.	-8.12E+04	8.12E+04	-8.11E+04	8.11E+04	-1.25E+03	1.24E+03



Table N–133. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.137	-7.86E+03	7.86E+03	-7.85E+03	7.85E+03	-1.57E+03	1.57E+03
15.	-4.00	-2.38E+04	2.38E+04	-2.38E+04	2.38E+04	-1.59E+03	1.59E+03
30.	-40.5	-4.98E+04	4.98E+04	-4.97E+04	4.97E+04	-1.66E+03	1.66E+03
45.	-85.1	-7.65E+04	7.65E+04	-7.64E+04	7.64E+04	-1.70E+03	1.70E+03
65.	62.2	-1.03E+05	1.03E+05	-1.03E+05	1.03E+05	-1.59E+03	1.59E+03

Table N–134. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.537	-7.67E+03	7.65E+03	-7.59E+03	7.62E+03	-1.52E+03	1.52E+03
15.	-15.8	-2.28E+04	2.27E+04	-2.27E+04	2.27E+04	-1.51E+03	1.51E+03
30.	-37.3	-4.71E+04	4.71E+04	-4.70E+04	4.69E+04	-1.56E+03	1.57E+03
45.	-52.3	-7.26E+04	7.25E+04	-7.25E+04	7.24E+04	-1.61E+03	1.61E+03
65.	295.	-9.77E+04	9.78E+04	-9.74E+04	9.76E+04	-1.50E+03	1.50E+03

Table N-135. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	745.	-4.49E+04	4.57E+04	-4.46E+04	4.54E+04	-1.51E+03	1.49E+03
45.	1.18E+03	-6.88E+04	7.01E+04	-6.85E+04	6.97E+04	-1.55E+03	1.52E+03
65.	1.59E+03	-9.28E+04	9.42E+04	-9.23E+04	9.38E+04	-1.44E+03	1.42E+03

Table N-136. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-1.38E-02	-7.89E+03	7.89E+03	-7.81E+03	7.81E+03	-1.56E+03	1.56E+03
15.	-0.199	-2.38E+04	2.38E+04	-2.36E+04	2.36E+04	-1.57E+03	1.57E+03
30.	-1.64	-4.89E+04	4.89E+04	-4.87E+04	4.87E+04	-1.62E+03	1.62E+03
45.	-5.85	-7.55E+04	7.55E+04	-7.54E+04	7.54E+04	-1.67E+03	1.67E+03
65.	58.1	-1.02E+05	1.03E+05	-1.02E+05	1.02E+05	-1.57E+03	1.58E+03

# TASK 1/ROLL MOTION/MODEL 5514

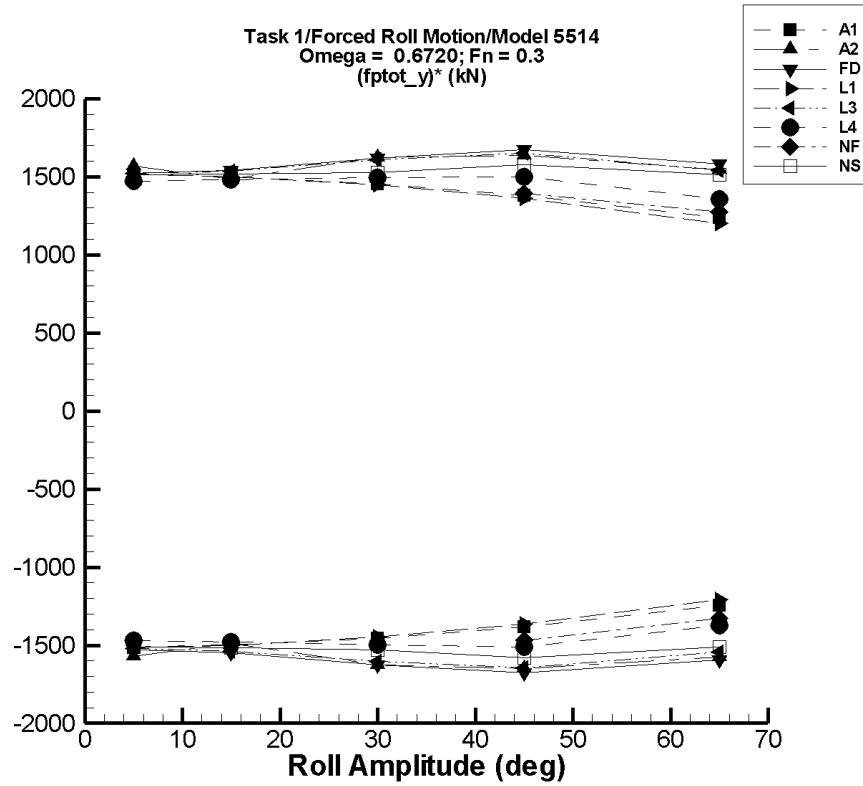


Figure N-18. Minimum and Maximum of  $(F_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-137. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.844	-7.65E+03	7.65E+03	-7.56E+03	7.56E+03	-1.51E+03	1.51E+03
15.	5.08	-2.27E+04	2.27E+04	-2.25E+04	2.25E+04	-1.50E+03	1.50E+03
30.	27.0	-4.41E+04	4.40E+04	-4.36E+04	4.36E+04	-1.45E+03	1.45E+03
45.	81.5	-6.27E+04	6.27E+04	-6.21E+04	6.21E+04	-1.38E+03	1.38E+03
65.	227.	-8.13E+04	8.13E+04	-8.08E+04	8.08E+04	-1.25E+03	1.24E+03

Table N-138. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.93	-7.94E+03	7.93E+03	-7.85E+03	7.84E+03	-1.57E+03	1.57E+03
15.	16.7	-2.25E+04	2.25E+04	-2.23E+04	2.23E+04	-1.49E+03	1.48E+03
30.	16.4	-4.93E+04	4.92E+04	-4.87E+04	4.86E+04	-1.62E+03	1.62E+03
45.	445.	-7.50E+04	7.49E+04	-7.38E+04	7.41E+04	-1.65E+03	1.64E+03
65.	671.	-1.02E+05	1.02E+05	-1.02E+05	1.01E+05	-1.58E+03	1.55E+03

Table N-139. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-6.32E-02	-7.70E+03	7.70E+03	-7.66E+03	7.61E+03	-1.53E+03	1.52E+03
15.	-6.22	-2.34E+04	2.34E+04	-2.33E+04	2.31E+04	-1.55E+03	1.54E+03
30.	-59.9	-4.92E+04	4.92E+04	-4.88E+04	4.85E+04	-1.63E+03	1.62E+03
45.	-104.	-7.60E+04	7.60E+04	-7.56E+04	7.51E+04	-1.68E+03	1.67E+03
65.	80.6	-1.04E+05	1.04E+05	-1.04E+05	1.03E+05	-1.60E+03	1.58E+03

Table N-140. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.275	-7.62E+03	7.62E+03	-7.58E+03	7.58E+03	-1.52E+03	1.52E+03
15.	4.58	-2.26E+04	2.26E+04	-2.25E+04	2.25E+04	-1.50E+03	1.50E+03
30.	33.6	-4.36E+04	4.36E+04	-4.34E+04	4.34E+04	-1.45E+03	1.45E+03
45.	109.	-6.15E+04	6.15E+04	-6.13E+04	6.13E+04	-1.36E+03	1.36E+03
65.	315.	-7.85E+04	7.85E+04	-7.83E+04	7.83E+04	-1.21E+03	1.20E+03

Table N-141. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-3.21E-02	-7.63E+03	7.63E+03	-7.60E+03	7.60E+03	-1.52E+03	1.52E+03
15.	-3.93	-2.32E+04	2.32E+04	-2.31E+04	2.31E+04	-1.54E+03	1.54E+03
30.	-41.4	-4.84E+04	4.84E+04	-4.82E+04	4.82E+04	-1.60E+03	1.61E+03
45.	-72.4	-7.44E+04	7.44E+04	-7.41E+04	7.41E+04	-1.65E+03	1.65E+03
65.	97.6	-1.00E+05	1.00E+05	-1.00E+05	1.00E+05	-1.54E+03	1.54E+03

Table N-142. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.12	-7.40E+03	7.42E+03	-7.35E+03	7.36E+03	-1.47E+03	1.47E+03
15.	10.3	-2.23E+04	2.23E+04	-2.22E+04	2.22E+04	-1.48E+03	1.48E+03
30.	3.33	-4.50E+04	4.51E+04	-4.49E+04	4.48E+04	-1.50E+03	1.49E+03
45.	143.	-6.84E+04	6.81E+04	-6.78E+04	6.77E+04	-1.51E+03	1.50E+03
65.	784.	-8.87E+04	9.02E+04	-8.85E+04	8.91E+04	-1.37E+03	1.36E+03

Table N-143. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	1.19E+03	-4.39E+04	4.36E+04	-4.37E+04	4.33E+04	-1.50E+03	1.41E+03
45.	1.65E+03	-6.47E+04	6.47E+04	-6.45E+04	6.44E+04	-1.47E+03	1.39E+03
65.	2.25E+03	-8.48E+04	8.55E+04	-8.41E+04	8.51E+04	-1.33E+03	1.28E+03

Table N-144. Minimum and Maximum of  $F_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{ptot}}$		Filtered $F_y^{\text{ptot}}$		Filtered $(F_y^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.294	-7.64E+03	7.64E+03	-7.57E+03	7.57E+03	-1.51E+03	1.51E+03
15.	0.481	-2.30E+04	2.30E+04	-2.27E+04	2.27E+04	-1.52E+03	1.52E+03
30.	-2.39	-4.60E+04	4.60E+04	-4.58E+04	4.58E+04	-1.53E+03	1.53E+03
45.	-10.6	-7.12E+04	7.12E+04	-7.10E+04	7.10E+04	-1.58E+03	1.58E+03
65.	19.1	-1.00E+05	9.87E+04	-9.81E+04	9.83E+04	-1.51E+03	1.51E+03

# TASK 1/ROLL MOTION/MODEL 5514

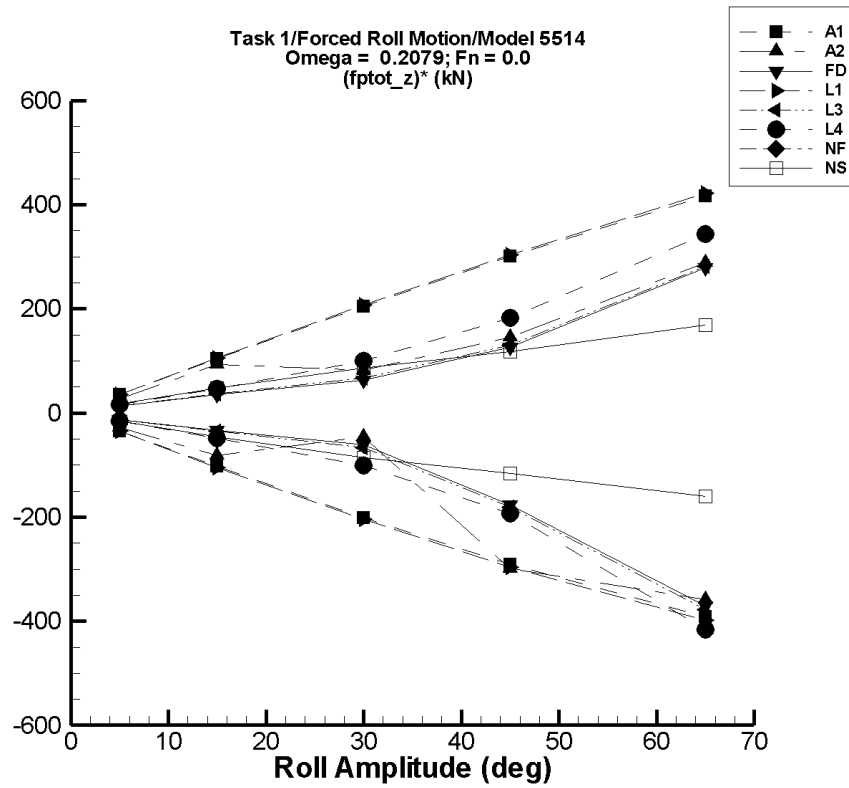


Figure N-19. Minimum and Maximum of  $(F_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.



TASK 1/ROLL MOTION/MODEL 5514

Table N-145. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-34.5	34.7
15.	9.04E+04	8.89E+04	9.20E+04	8.89E+04	9.20E+04	-103.	104.
30.	8.58E+04	7.98E+04	9.20E+04	7.98E+04	9.20E+04	-201.	205.
45.	7.85E+04	6.53E+04	9.20E+04	6.54E+04	9.20E+04	-291.	301.
65.	6.49E+04	3.94E+04	9.20E+04	3.95E+04	9.20E+04	-392.	416.

Table N-146. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-27.9	26.4
15.	9.06E+04	8.94E+04	9.20E+04	8.94E+04	9.20E+04	-82.3	92.6
30.	8.95E+04	8.18E+04	9.20E+04	8.81E+04	9.20E+04	-46.0	82.4
45.	8.54E+04	2.78E+04	1.20E+05	7.20E+04	9.20E+04	-299.	146.
65.	7.32E+04	3.93E+04	9.20E+04	4.99E+04	9.19E+04	-358.	288.

Table N-147. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_z^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_z^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_z^{\text{ptot}})^*$ Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.4	12.8
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-33.2	35.1
30.	9.01E+04	8.83E+04	9.20E+04	8.83E+04	9.20E+04	-61.0	62.6
45.	8.63E+04	7.84E+04	9.20E+04	7.84E+04	9.20E+04	-176.	126.
65.	7.39E+04	4.97E+04	9.20E+04	4.98E+04	9.21E+04	-371.	280.

Table N-148. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_z^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN)	$F_z^{\text{ptot}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_z^{\text{ptot}})^*$ Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-35.1	35.1
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-105.	105.
30.	8.56E+04	7.95E+04	9.19E+04	7.95E+04	9.19E+04	-205.	207.
45.	7.83E+04	6.49E+04	9.20E+04	6.49E+04	9.20E+04	-296.	304.
65.	6.47E+04	3.88E+04	9.22E+04	3.88E+04	9.21E+04	-398.	422.

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Table N-149. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-13.1	13.3
15.	9.13E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-35.3	36.9
30.	8.98E+04	8.79E+04	9.19E+04	8.79E+04	9.19E+04	-66.3	67.1
45.	8.61E+04	7.79E+04	9.20E+04	7.79E+04	9.20E+04	-181.	131.
65.	7.38E+04	4.92E+04	9.22E+04	4.92E+04	9.21E+04	-378.	282.

Table N-150. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.16E+04	9.18E+04	9.16E+04	9.18E+04	-15.9	15.9
15.	9.12E+04	9.05E+04	9.20E+04	9.05E+04	9.20E+04	-48.0	47.0
30.	8.98E+04	8.68E+04	9.29E+04	8.68E+04	9.28E+04	-101.	101.
45.	8.59E+04	7.72E+04	9.42E+04	7.72E+04	9.42E+04	-193.	183.
65.	7.32E+04	4.61E+04	9.57E+04	4.62E+04	9.55E+04	-416.	344.

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Table N–151. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–152. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-16.2	16.9
15.	9.14E+04	9.07E+04	9.21E+04	9.07E+04	9.21E+04	-46.0	47.9
30.	9.01E+04	8.74E+04	9.27E+04	8.75E+04	9.27E+04	-86.2	86.2
45.	8.84E+04	8.31E+04	9.38E+04	8.31E+04	9.37E+04	-116.	118.
65.	8.50E+04	7.45E+04	9.62E+04	7.46E+04	9.60E+04	-160.	169.

# TASK 1/ROLL MOTION/MODEL 5514

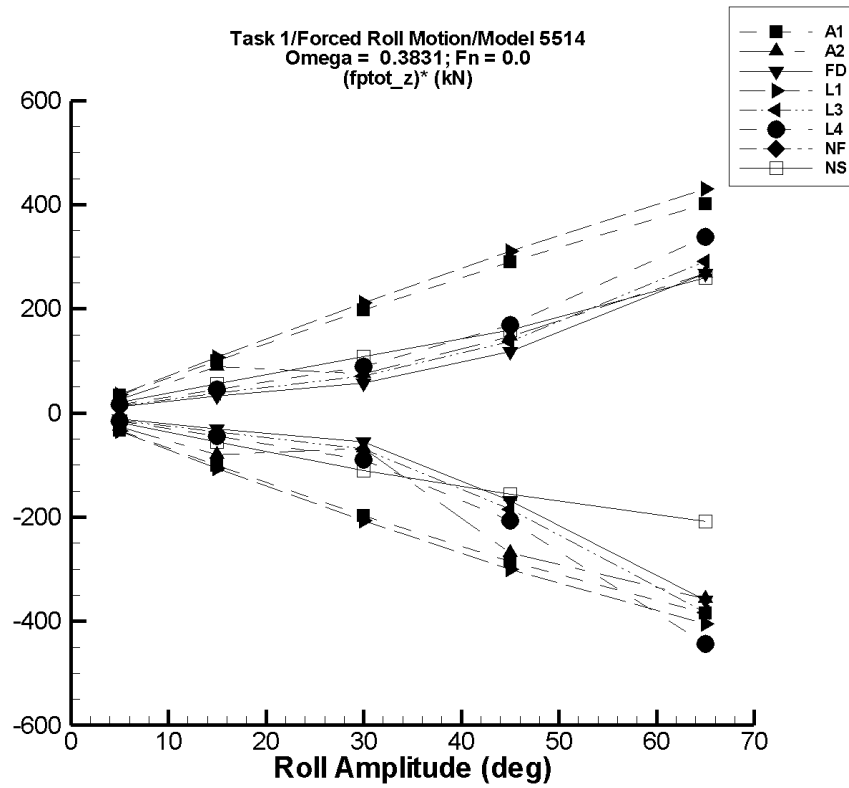


Figure N-20. Minimum and Maximum of  $(F_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-153. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-33.7	33.4
15.	9.05E+04	8.90E+04	9.20E+04	8.90E+04	9.20E+04	-100.	99.8
30.	8.60E+04	8.01E+04	9.20E+04	8.01E+04	9.19E+04	-197.	197.
45.	7.89E+04	6.60E+04	9.20E+04	6.60E+04	9.19E+04	-285.	290.
65.	6.57E+04	4.07E+04	9.20E+04	4.07E+04	9.18E+04	-385.	401.

Table N-154. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-27.1	25.0
15.	9.06E+04	8.94E+04	9.20E+04	8.94E+04	9.20E+04	-80.0	88.8
30.	8.97E+04	8.14E+04	9.20E+04	8.76E+04	9.19E+04	-67.5	75.4
45.	8.53E+04	2.86E+04	1.18E+05	7.32E+04	9.19E+04	-269.	147.
65.	7.43E+04	5.11E+04	9.20E+04	5.11E+04	9.17E+04	-357.	267.

Table N-155. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-11.5	11.9
15.	9.15E+04	9.11E+04	9.20E+04	9.11E+04	9.20E+04	-30.6	32.3
30.	9.03E+04	8.86E+04	9.20E+04	8.86E+04	9.20E+04	-56.0	57.1
45.	8.67E+04	7.89E+04	9.20E+04	7.91E+04	9.20E+04	-168.	118.
65.	7.45E+04	5.07E+04	9.20E+04	5.11E+04	9.19E+04	-360.	267.

Table N-156. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-35.5	35.8
15.	9.03E+04	8.87E+04	9.19E+04	8.87E+04	9.19E+04	-106.	107.
30.	8.58E+04	7.95E+04	9.21E+04	7.95E+04	9.21E+04	-207.	211.
45.	7.85E+04	6.49E+04	9.24E+04	6.50E+04	9.25E+04	-300.	310.
65.	6.52E+04	3.88E+04	9.31E+04	3.89E+04	9.32E+04	-405.	430.

Table N-157. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-13.6	13.9
15.	9.13E+04	9.07E+04	9.19E+04	9.07E+04	9.19E+04	-36.9	38.7
30.	8.99E+04	8.79E+04	9.21E+04	8.79E+04	9.21E+04	-69.5	70.7
45.	8.63E+04	7.79E+04	9.24E+04	7.80E+04	9.24E+04	-185.	137.
65.	7.42E+04	4.92E+04	9.31E+04	4.93E+04	9.32E+04	-383.	291.

Table N-158. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.16E+04	9.18E+04	9.16E+04	9.18E+04	-15.9	15.8
15.	9.13E+04	9.06E+04	9.20E+04	9.06E+04	9.19E+04	-45.1	45.3
30.	8.99E+04	8.71E+04	9.26E+04	8.72E+04	9.26E+04	-89.6	88.6
45.	8.61E+04	7.66E+04	9.39E+04	7.68E+04	9.37E+04	-207.	169.
65.	7.32E+04	4.41E+04	9.64E+04	4.44E+04	9.52E+04	-444.	338.



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Table N–159. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–160. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-19.0	19.8
15.	9.14E+04	9.05E+04	9.23E+04	9.06E+04	9.23E+04	-55.7	56.0
30.	9.01E+04	8.67E+04	9.35E+04	8.68E+04	9.34E+04	-111.	109.
45.	8.85E+04	8.14E+04	9.59E+04	8.14E+04	9.57E+04	-156.	160.
65.	8.53E+04	7.18E+04	1.03E+05	7.18E+04	1.02E+05	-208.	260.

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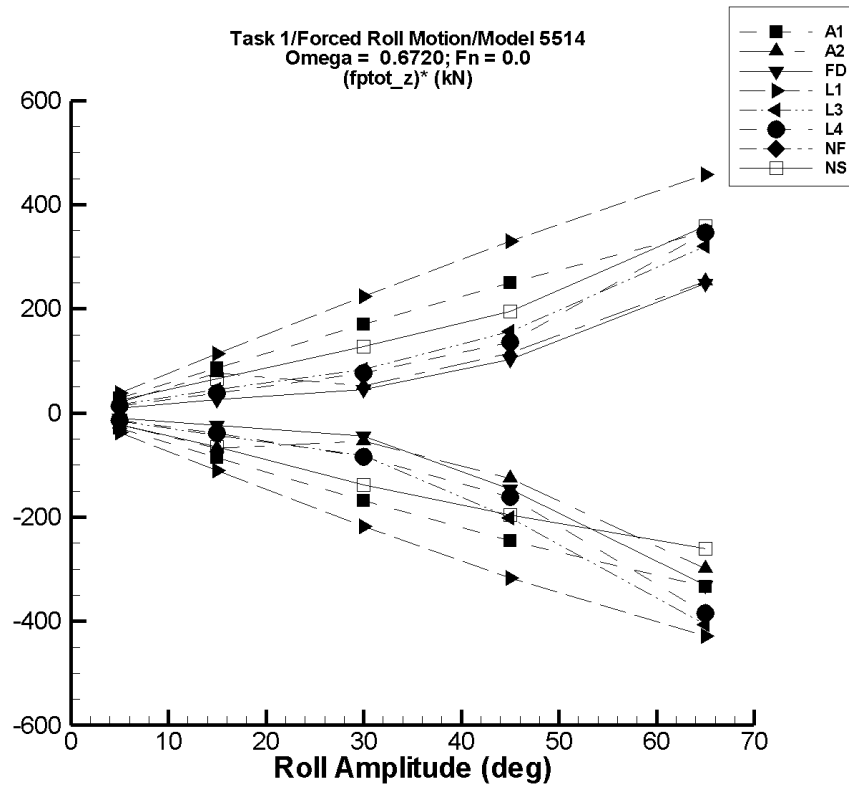


Figure N-21. Minimum and Maximum of  $(F_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-161. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-28.7	28.8
15.	9.06E+04	8.93E+04	9.20E+04	8.93E+04	9.19E+04	-85.7	85.9
30.	8.66E+04	8.13E+04	9.20E+04	8.16E+04	9.17E+04	-168.	170.
45.	8.02E+04	6.86E+04	9.20E+04	6.91E+04	9.14E+04	-245.	250.
65.	6.82E+04	4.55E+04	9.20E+04	4.65E+04	9.09E+04	-334.	349.

Table N-162. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.17E+04	9.20E+04	9.18E+04	9.20E+04	-22.4	20.7
15.	9.08E+04	8.97E+04	9.20E+04	8.98E+04	9.19E+04	-67.9	77.2
30.	9.02E+04	8.36E+04	9.20E+04	8.86E+04	9.18E+04	-54.5	51.8
45.	8.70E+04	4.23E+04	9.27E+04	8.14E+04	9.22E+04	-125.	115.
65.	7.65E+04	2.90E+04	9.43E+04	5.71E+04	9.29E+04	-299.	252.

Table N-163. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-9.42	9.80
15.	9.16E+04	9.12E+04	9.20E+04	9.12E+04	9.20E+04	-24.5	26.2
30.	9.06E+04	8.92E+04	9.20E+04	8.93E+04	9.20E+04	-44.1	45.2
45.	8.73E+04	8.03E+04	9.20E+04	8.07E+04	9.19E+04	-146.	103.
65.	7.58E+04	5.33E+04	9.20E+04	5.43E+04	9.20E+04	-331.	249.

Table N-164. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-37.3	37.9
15.	9.04E+04	8.87E+04	9.21E+04	8.87E+04	9.21E+04	-111.	113.
30.	8.61E+04	7.95E+04	9.29E+04	7.96E+04	9.28E+04	-218.	224.
45.	7.93E+04	6.49E+04	9.42E+04	6.51E+04	9.42E+04	-317.	330.
65.	6.70E+04	3.87E+04	9.68E+04	3.91E+04	9.67E+04	-428.	458.

Table N-165. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-15.6	16.1
15.	9.14E+04	9.07E+04	9.20E+04	9.07E+04	9.20E+04	-43.0	45.3
30.	9.03E+04	8.78E+04	9.28E+04	8.79E+04	9.28E+04	-81.6	83.8
45.	8.71E+04	7.79E+04	9.42E+04	7.81E+04	9.42E+04	-202.	156.
65.	7.60E+04	4.91E+04	9.67E+04	4.96E+04	9.68E+04	-406.	320.

Table N-166. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.16E+04	9.18E+04	9.17E+04	9.18E+04	-13.6	13.0
15.	9.13E+04	9.06E+04	9.19E+04	9.07E+04	9.19E+04	-38.8	38.5
30.	9.00E+04	8.70E+04	9.24E+04	8.74E+04	9.23E+04	-85.0	76.9
45.	8.64E+04	7.84E+04	9.31E+04	7.91E+04	9.25E+04	-161.	136.
65.	7.50E+04	4.80E+04	1.00E+05	5.00E+04	9.75E+04	-384.	347.

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Table N-167. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-168. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-21.8	24.0
15.	9.14E+04	9.04E+04	9.25E+04	9.04E+04	9.24E+04	-65.7	65.2
30.	9.01E+04	8.59E+04	9.42E+04	8.60E+04	9.39E+04	-138.	127.
45.	8.85E+04	7.95E+04	9.79E+04	7.97E+04	9.73E+04	-196.	195.
65.	8.57E+04	6.81E+04	1.11E+05	6.88E+04	1.09E+05	-260.	359.

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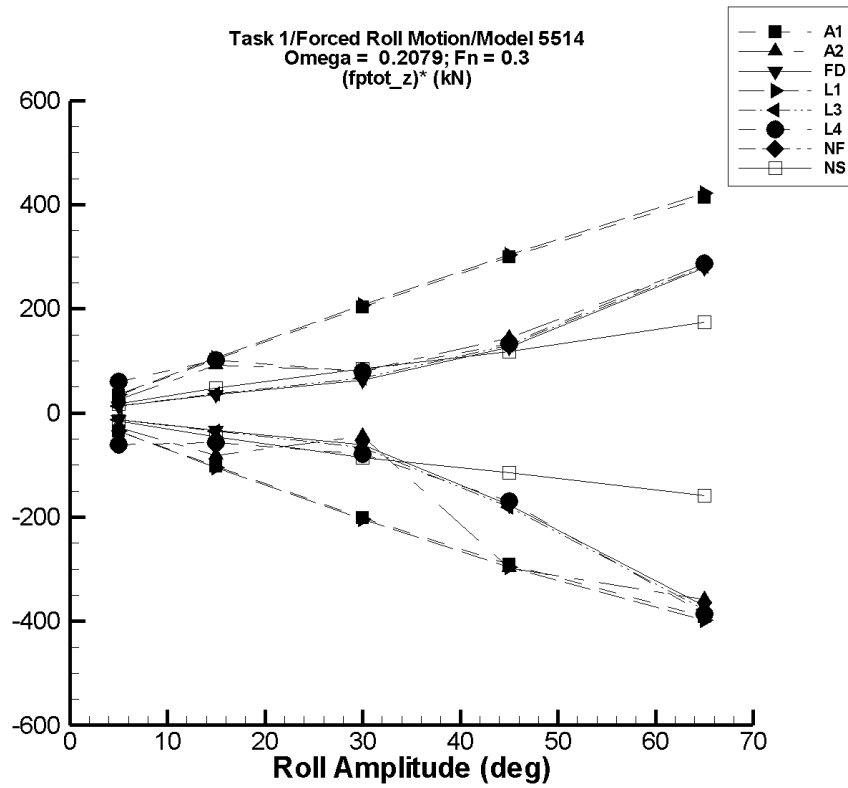


Figure N-22. Minimum and Maximum of  $(F_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

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Table N–169. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-34.4	34.5
15.	9.04E+04	8.89E+04	9.20E+04	8.89E+04	9.20E+04	-103.	103.
30.	8.59E+04	7.98E+04	9.20E+04	7.98E+04	9.20E+04	-201.	204.
45.	7.85E+04	6.54E+04	9.20E+04	6.54E+04	9.20E+04	-291.	299.
65.	6.51E+04	3.95E+04	9.20E+04	3.96E+04	9.20E+04	-392.	414.

Table N–170. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-27.9	26.3
15.	9.06E+04	8.94E+04	9.20E+04	8.94E+04	9.20E+04	-82.2	92.0
30.	8.95E+04	8.19E+04	9.20E+04	8.82E+04	9.20E+04	-44.0	81.4
45.	8.55E+04	2.79E+04	1.20E+05	7.21E+04	9.20E+04	-298.	144.
65.	7.33E+04	3.91E+04	9.20E+04	5.00E+04	9.19E+04	-358.	286.



Table N-171. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.4	12.8
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-33.2	35.1
30.	9.01E+04	8.83E+04	9.20E+04	8.83E+04	9.20E+04	-61.0	62.6
45.	8.63E+04	7.84E+04	9.20E+04	7.84E+04	9.20E+04	-176.	126.
65.	7.39E+04	4.97E+04	9.20E+04	4.98E+04	9.21E+04	-371.	280.

Table N-172. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.69E+04	8.67E+04	8.71E+04	8.67E+04	8.71E+04	-35.2	35.1
15.	8.55E+04	8.39E+04	8.71E+04	8.39E+04	8.71E+04	-105.	105.
30.	8.09E+04	7.47E+04	8.71E+04	7.48E+04	8.71E+04	-205.	207.
45.	7.35E+04	6.02E+04	8.72E+04	6.02E+04	8.72E+04	-296.	304.
65.	6.00E+04	3.40E+04	8.74E+04	3.41E+04	8.74E+04	-398.	422.

Table N-173. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.70E+04	8.69E+04	8.70E+04	8.69E+04	8.70E+04	-13.1	13.3
15.	8.65E+04	8.60E+04	8.71E+04	8.60E+04	8.71E+04	-35.3	36.9
30.	8.51E+04	8.31E+04	8.71E+04	8.31E+04	8.71E+04	-66.4	67.2
45.	8.13E+04	7.32E+04	8.72E+04	7.32E+04	8.72E+04	-181.	131.
65.	6.91E+04	4.44E+04	8.74E+04	4.45E+04	8.74E+04	-378.	282.

Table N-174. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.70E+04	8.66E+04	8.74E+04	8.67E+04	8.73E+04	-61.2	59.4
15.	8.65E+04	8.56E+04	8.82E+04	8.56E+04	8.80E+04	-56.9	101.
30.	8.49E+04	8.25E+04	8.75E+04	8.26E+04	8.73E+04	-78.9	79.7
45.	8.17E+04	7.40E+04	8.78E+04	7.40E+04	8.77E+04	-169.	133.
65.	6.98E+04	4.46E+04	8.86E+04	4.47E+04	8.85E+04	-387.	287.

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Table N-175. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-176. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-16.1	16.8
15.	9.14E+04	9.07E+04	9.21E+04	9.07E+04	9.21E+04	-45.6	47.2
30.	9.01E+04	8.75E+04	9.27E+04	8.75E+04	9.26E+04	-85.4	85.3
45.	8.84E+04	8.32E+04	9.38E+04	8.32E+04	9.37E+04	-115.	118.
65.	8.51E+04	7.47E+04	9.66E+04	7.47E+04	9.64E+04	-159.	174.

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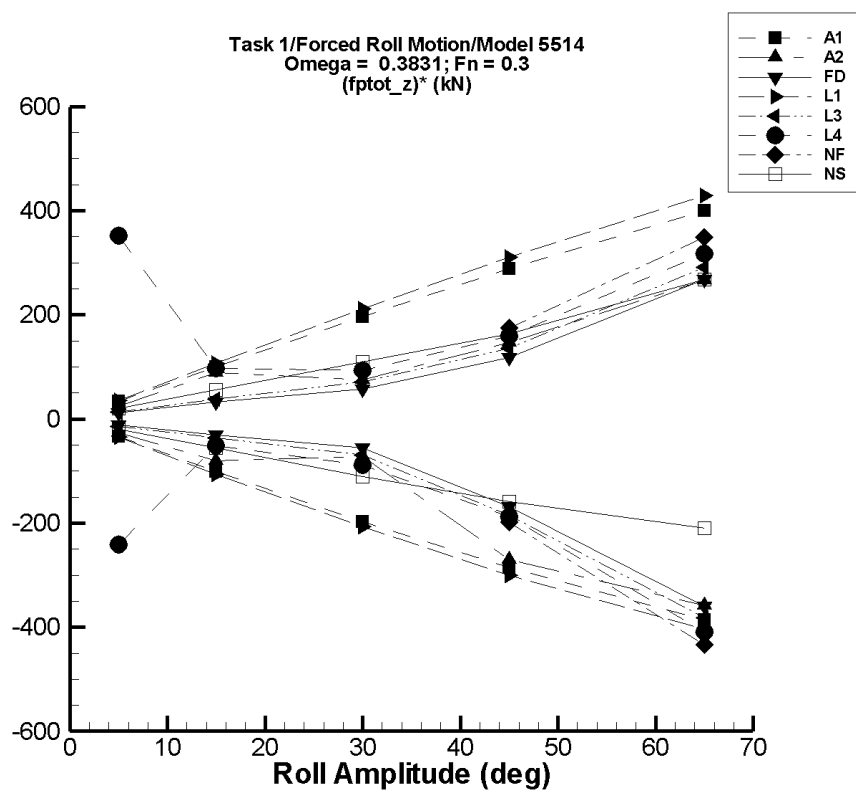


Figure N-23. Minimum and Maximum of  $(F_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

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Table N-177. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-33.8	33.3
15.	9.05E+04	8.90E+04	9.20E+04	8.89E+04	9.20E+04	-101.	99.5
30.	8.60E+04	8.01E+04	9.20E+04	8.01E+04	9.19E+04	-197.	196.
45.	7.88E+04	6.60E+04	9.20E+04	6.60E+04	9.18E+04	-286.	289.
65.	6.57E+04	4.07E+04	9.20E+04	4.06E+04	9.17E+04	-386.	400.

Table N-178. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-27.2	24.9
15.	9.06E+04	8.94E+04	9.20E+04	8.94E+04	9.20E+04	-80.2	88.5
30.	8.97E+04	8.13E+04	9.20E+04	8.75E+04	9.19E+04	-72.1	75.5
45.	8.52E+04	2.85E+04	1.18E+05	7.31E+04	9.19E+04	-270.	147.
65.	7.43E+04	5.11E+04	9.20E+04	5.10E+04	9.16E+04	-358.	266.

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Table N-179. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-11.5	11.9
15.	9.15E+04	9.11E+04	9.20E+04	9.11E+04	9.20E+04	-30.6	32.3
30.	9.03E+04	8.86E+04	9.20E+04	8.86E+04	9.20E+04	-56.0	57.1
45.	8.67E+04	7.89E+04	9.20E+04	7.91E+04	9.20E+04	-168.	118.
65.	7.45E+04	5.07E+04	9.20E+04	5.11E+04	9.19E+04	-360.	267.

Table N-180. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.69E+04	8.67E+04	8.71E+04	8.67E+04	8.71E+04	-35.5	35.8
15.	8.55E+04	8.39E+04	8.71E+04	8.39E+04	8.71E+04	-106.	107.
30.	8.10E+04	7.47E+04	8.73E+04	7.48E+04	8.73E+04	-207.	211.
45.	7.37E+04	6.01E+04	8.77E+04	6.02E+04	8.77E+04	-300.	310.
65.	6.04E+04	3.40E+04	8.83E+04	3.41E+04	8.83E+04	-404.	430.

Table N-181. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.70E+04	8.69E+04	8.71E+04	8.69E+04	8.71E+04	-13.6	13.9
15.	8.65E+04	8.60E+04	8.71E+04	8.60E+04	8.71E+04	-36.8	38.6
30.	8.52E+04	8.31E+04	8.73E+04	8.31E+04	8.73E+04	-69.3	70.6
45.	8.15E+04	7.31E+04	8.76E+04	7.32E+04	8.77E+04	-184.	136.
65.	6.94E+04	4.44E+04	8.83E+04	4.46E+04	8.83E+04	-382.	291.

Table N-182. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.70E+04	8.57E+04	8.89E+04	8.58E+04	8.87E+04	-241.	352.
15.	8.64E+04	8.55E+04	8.80E+04	8.56E+04	8.79E+04	-51.0	96.7
30.	8.50E+04	8.22E+04	8.80E+04	8.23E+04	8.78E+04	-88.7	92.9
45.	8.16E+04	7.30E+04	8.90E+04	7.32E+04	8.88E+04	-187.	159.
65.	6.95E+04	4.24E+04	9.15E+04	4.29E+04	9.02E+04	-409.	318.

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Table N-183. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	8.34E+04	8.01E+04	8.72E+04	8.02E+04	8.71E+04	-108.	122.
45.	8.07E+04	7.15E+04	8.87E+04	7.17E+04	8.85E+04	-199.	174.
65.	6.97E+04	4.08E+04	9.28E+04	4.15E+04	9.24E+04	-434.	349.

Table N-184. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-19.2	19.9
15.	9.14E+04	9.05E+04	9.23E+04	9.06E+04	9.23E+04	-55.8	55.9
30.	9.01E+04	8.68E+04	9.36E+04	8.68E+04	9.34E+04	-111.	110.
45.	8.85E+04	8.13E+04	9.61E+04	8.14E+04	9.59E+04	-158.	163.
65.	8.55E+04	7.18E+04	1.03E+05	7.18E+04	1.03E+05	-210.	268.



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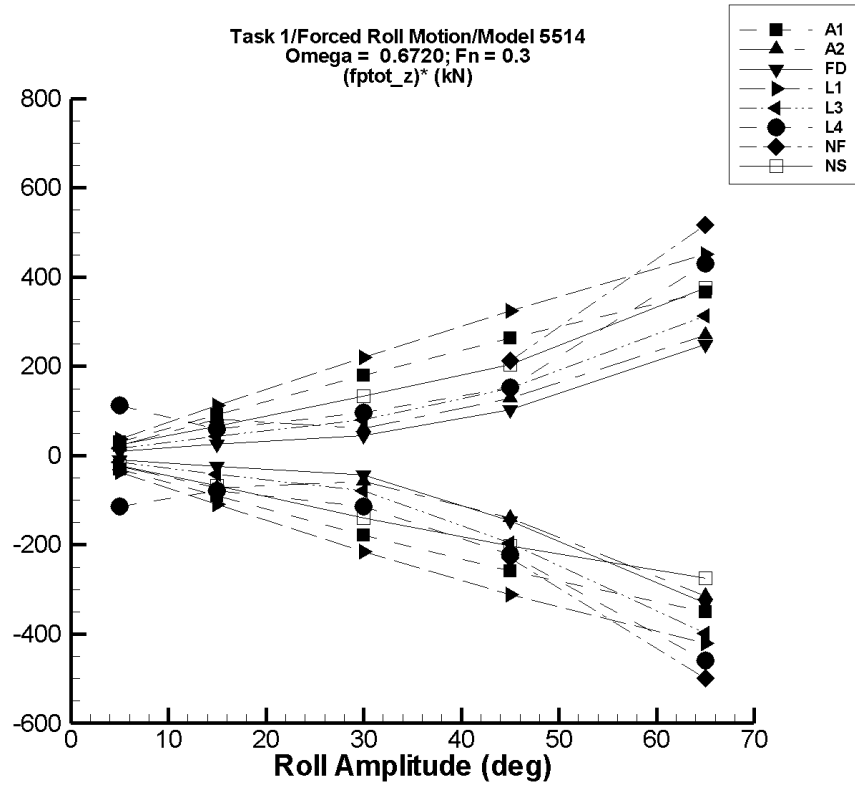


Figure N-24. Minimum and Maximum of  $(F_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-185. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.17E+04	9.20E+04	-30.4	30.4
15.	9.05E+04	8.91E+04	9.20E+04	8.92E+04	9.19E+04	-90.6	90.9
30.	8.63E+04	8.07E+04	9.20E+04	8.10E+04	9.17E+04	-178.	180.
45.	7.95E+04	6.74E+04	9.20E+04	6.79E+04	9.14E+04	-258.	264.
65.	6.70E+04	4.32E+04	9.21E+04	4.42E+04	9.08E+04	-350.	367.

Table N-186. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-24.1	22.3
15.	9.07E+04	8.96E+04	9.20E+04	8.96E+04	9.19E+04	-73.1	82.2
30.	8.99E+04	8.33E+04	9.21E+04	8.82E+04	9.18E+04	-58.1	61.4
45.	8.64E+04	4.19E+04	9.24E+04	8.01E+04	9.22E+04	-139.	129.
65.	7.53E+04	2.72E+04	9.41E+04	5.48E+04	9.28E+04	-315.	269.

Table N–187. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-9.42	9.80
15.	9.16E+04	9.12E+04	9.20E+04	9.12E+04	9.20E+04	-24.5	26.2
30.	9.06E+04	8.92E+04	9.20E+04	8.93E+04	9.20E+04	-44.1	45.2
45.	8.73E+04	8.03E+04	9.20E+04	8.07E+04	9.19E+04	-146.	103.
65.	7.58E+04	5.33E+04	9.20E+04	5.43E+04	9.20E+04	-331.	249.

Table N–188. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.69E+04	8.67E+04	8.71E+04	8.67E+04	8.71E+04	-36.7	37.4
15.	8.56E+04	8.39E+04	8.73E+04	8.39E+04	8.73E+04	-110.	112.
30.	8.12E+04	7.47E+04	8.79E+04	7.48E+04	8.79E+04	-215.	221.
45.	7.43E+04	6.00E+04	8.89E+04	6.02E+04	8.89E+04	-311.	324.
65.	6.15E+04	3.37E+04	9.08E+04	3.42E+04	9.08E+04	-421.	451.

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Table N–189. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.70E+04	8.69E+04	8.71E+04	8.69E+04	8.71E+04	-15.0	15.5
15.	8.66E+04	8.60E+04	8.72E+04	8.60E+04	8.72E+04	-41.2	43.5
30.	8.54E+04	8.30E+04	8.78E+04	8.31E+04	8.78E+04	-78.1	80.4
45.	8.21E+04	7.30E+04	8.88E+04	7.32E+04	8.89E+04	-196.	151.
65.	7.06E+04	4.41E+04	9.08E+04	4.46E+04	9.09E+04	-399.	313.

Table N–190. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	8.70E+04	8.64E+04	8.76E+04	8.64E+04	8.75E+04	-114.	113.
15.	8.64E+04	8.49E+04	8.74E+04	8.52E+04	8.72E+04	-78.7	59.0
30.	8.48E+04	8.11E+04	8.79E+04	8.13E+04	8.77E+04	-114.	96.8
45.	8.09E+04	7.04E+04	8.82E+04	7.09E+04	8.77E+04	-222.	152.
65.	6.89E+04	3.77E+04	9.77E+04	3.90E+04	9.69E+04	-460.	431.

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Table N–191. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	8.34E+04	7.96E+04	8.73E+04	7.96E+04	8.72E+04	-125.	127.
45.	8.07E+04	7.01E+04	9.03E+04	7.03E+04	9.02E+04	-231.	211.
65.	7.27E+04	3.97E+04	1.08E+05	4.03E+04	1.06E+05	-499.	517.

Table N–192. Minimum and Maximum of  $F_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{ptot}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{ptot}}$		Filtered $F_z^{\text{ptot}}$		Filtered $(F_z^{\text{ptot}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-22.7	24.6
15.	9.14E+04	9.04E+04	9.25E+04	9.04E+04	9.24E+04	-67.2	66.4
30.	9.01E+04	8.59E+04	9.44E+04	8.59E+04	9.41E+04	-140.	133.
45.	8.86E+04	7.92E+04	9.84E+04	7.94E+04	9.77E+04	-203.	203.
65.	8.60E+04	6.72E+04	1.12E+05	6.81E+04	1.10E+05	-274.	375.

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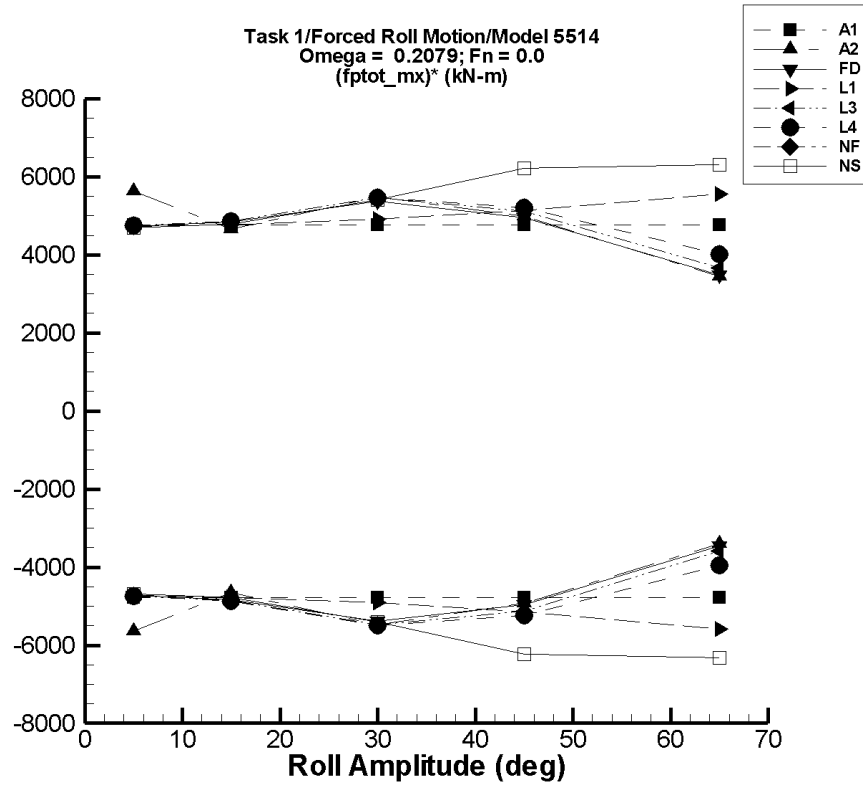


Figure N-25. Minimum and Maximum of  $(M_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N–193. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-0.355	-2.39E+04	2.39E+04	-2.39E+04	2.38E+04	-4.78E+03	4.77E+03
15.	-1.07	-7.16E+04	7.16E+04	-7.16E+04	7.15E+04	-4.77E+03	4.77E+03
30.	-2.12	-1.43E+05	1.43E+05	-1.43E+05	1.43E+05	-4.77E+03	4.77E+03
45.	-3.20	-2.15E+05	2.15E+05	-2.15E+05	2.15E+05	-4.77E+03	4.77E+03
65.	-4.62	-3.10E+05	3.10E+05	-3.10E+05	3.10E+05	-4.77E+03	4.77E+03

Table N–194. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-12.2	-2.82E+04	2.82E+04	-2.82E+04	2.82E+04	-5.64E+03	5.63E+03
15.	-118.	-6.99E+04	6.99E+04	-6.98E+04	6.98E+04	-4.65E+03	4.66E+03
30.	23.6	-1.65E+05	1.65E+05	-1.65E+05	1.64E+05	-5.49E+03	5.48E+03
45.	-650.	-2.81E+05	2.22E+05	-2.22E+05	2.24E+05	-4.92E+03	4.99E+03
65.	-727.	-2.24E+05	2.24E+05	-2.22E+05	2.23E+05	-3.41E+03	3.44E+03

Table N–195. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.256	-2.37E+04	2.37E+04	-2.36E+04	2.36E+04	-4.73E+03	4.73E+03
15.	13.9	-7.27E+04	7.27E+04	-7.26E+04	7.26E+04	-4.84E+03	4.84E+03
30.	156.	-1.62E+05	1.62E+05	-1.61E+05	1.61E+05	-5.39E+03	5.37E+03
45.	34.7	-2.23E+05	2.23E+05	-2.23E+05	2.23E+05	-4.97E+03	4.96E+03
65.	-1.13E+03	-2.26E+05	2.26E+05	-2.25E+05	2.25E+05	-3.45E+03	3.49E+03

Table N–196. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.432	-2.37E+04	2.36E+04	-2.36E+04	2.36E+04	-4.73E+03	4.73E+03
15.	10.9	-7.16E+04	7.16E+04	-7.16E+04	7.16E+04	-4.77E+03	4.77E+03
30.	86.0	-1.47E+05	1.47E+05	-1.47E+05	1.47E+05	-4.91E+03	4.91E+03
45.	284.	-2.31E+05	2.31E+05	-2.31E+05	2.31E+05	-5.15E+03	5.14E+03
65.	824.	-3.62E+05	3.62E+05	-3.62E+05	3.62E+05	-5.58E+03	5.55E+03



Table N–197. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.65	-2.37E+04	2.37E+04	-2.37E+04	2.37E+04	-4.74E+03	4.74E+03
15.	28.1	-7.29E+04	7.29E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	365.	-1.64E+05	1.64E+05	-1.64E+05	1.64E+05	-5.48E+03	5.46E+03
45.	86.7	-2.30E+05	2.30E+05	-2.30E+05	2.30E+05	-5.12E+03	5.12E+03
65.	-2.64E+03	-2.36E+05	2.36E+05	-2.36E+05	2.36E+05	-3.59E+03	3.67E+03

Table N–198. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.82	-2.37E+04	2.37E+04	-2.37E+04	2.37E+04	-4.74E+03	4.74E+03
15.	35.4	-7.29E+04	7.29E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	457.	-1.64E+05	1.65E+05	-1.64E+05	1.64E+05	-5.49E+03	5.46E+03
45.	444.	-2.36E+05	2.35E+05	-2.35E+05	2.35E+05	-5.24E+03	5.21E+03
65.	-2.41E+03	-2.60E+05	2.59E+05	-2.59E+05	2.58E+05	-3.95E+03	4.01E+03

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Table N–199. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–200. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.09E-02	-2.37E+04	2.37E+04	-2.34E+04	2.34E+04	-4.69E+03	4.69E+03
15.	-0.275	-7.25E+04	7.25E+04	-7.18E+04	7.18E+04	-4.78E+03	4.78E+03
30.	-3.14	-1.63E+05	1.63E+05	-1.62E+05	1.62E+05	-5.41E+03	5.41E+03
45.	-12.5	-2.81E+05	2.81E+05	-2.80E+05	2.80E+05	-6.22E+03	6.22E+03
65.	-851.	-4.12E+05	4.09E+05	-4.12E+05	4.09E+05	-6.33E+03	6.30E+03

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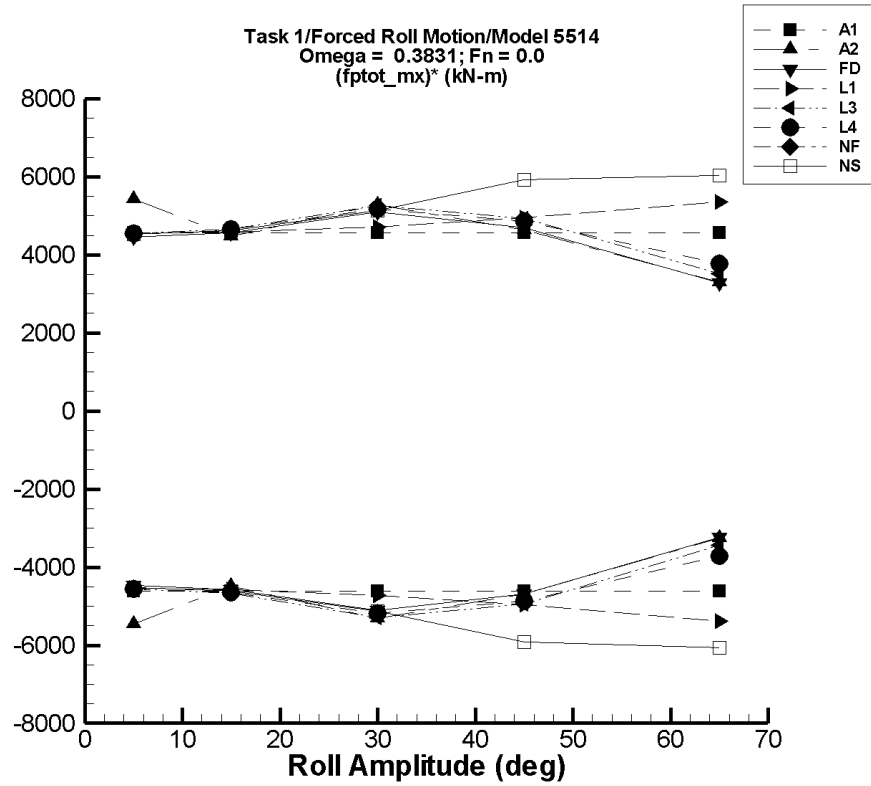


Figure N-26. Minimum and Maximum of  $(M_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N–201. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-1.74	-2.30E+04	2.29E+04	-2.31E+04	2.29E+04	-4.61E+03	4.57E+03
15.	-5.22	-6.90E+04	6.88E+04	-6.92E+04	6.85E+04	-4.61E+03	4.57E+03
30.	-10.4	-1.38E+05	1.38E+05	-1.38E+05	1.37E+05	-4.61E+03	4.57E+03
45.	-15.6	-2.07E+05	2.06E+05	-2.08E+05	2.06E+05	-4.61E+03	4.57E+03
65.	-22.6	-2.99E+05	2.98E+05	-3.00E+05	2.97E+05	-4.61E+03	4.57E+03

Table N–202. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-12.9	-2.73E+04	2.73E+04	-2.73E+04	2.72E+04	-5.47E+03	5.44E+03
15.	-115.	-6.73E+04	6.71E+04	-6.73E+04	6.68E+04	-4.48E+03	4.46E+03
30.	-52.1	-1.59E+05	1.59E+05	-1.60E+05	1.58E+05	-5.32E+03	5.28E+03
45.	-3.91E+03	-2.74E+05	2.13E+05	-2.15E+05	2.05E+05	-4.69E+03	4.64E+03
65.	-762.	-2.14E+05	2.15E+05	-2.12E+05	2.13E+05	-3.26E+03	3.29E+03

Table N–203. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	0.296	-2.24E+04	2.24E+04	-2.23E+04	2.23E+04	-4.46E+03	4.46E+03
15.	14.5	-6.88E+04	6.88E+04	-6.85E+04	6.85E+04	-4.57E+03	4.57E+03
30.	158.	-1.54E+05	1.54E+05	-1.53E+05	1.53E+05	-5.11E+03	5.10E+03
45.	-125.	-2.12E+05	2.12E+05	-2.11E+05	2.11E+05	-4.70E+03	4.70E+03
65.	-1.28E+03	-2.14E+05	2.14E+05	-2.12E+05	2.12E+05	-3.25E+03	3.28E+03

Table N–204. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	0.244	-2.27E+04	2.27E+04	-2.27E+04	2.27E+04	-4.54E+03	4.54E+03
15.	9.87	-6.88E+04	6.88E+04	-6.87E+04	6.87E+04	-4.58E+03	4.58E+03
30.	82.1	-1.42E+05	1.42E+05	-1.42E+05	1.42E+05	-4.72E+03	4.72E+03
45.	276.	-2.23E+05	2.23E+05	-2.23E+05	2.23E+05	-4.96E+03	4.94E+03
65.	801.	-3.50E+05	3.50E+05	-3.49E+05	3.49E+05	-5.39E+03	5.36E+03

Table N–205. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.53	-2.28E+04	2.28E+04	-2.28E+04	2.28E+04	-4.55E+03	4.55E+03
15.	26.5	-7.01E+04	7.01E+04	-7.00E+04	7.00E+04	-4.67E+03	4.66E+03
30.	352.	-1.59E+05	1.59E+05	-1.58E+05	1.58E+05	-5.29E+03	5.27E+03
45.	185.	-2.22E+05	2.22E+05	-2.22E+05	2.22E+05	-4.94E+03	4.93E+03
65.	-2.44E+03	-2.27E+05	2.27E+05	-2.26E+05	2.26E+05	-3.44E+03	3.52E+03

Table N–206. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.10	-2.28E+04	2.28E+04	-2.28E+04	2.28E+04	-4.55E+03	4.55E+03
15.	21.4	-6.98E+04	6.99E+04	-6.98E+04	6.98E+04	-4.65E+03	4.65E+03
30.	303.	-1.56E+05	1.56E+05	-1.55E+05	1.55E+05	-5.18E+03	5.16E+03
45.	-251.	-2.21E+05	2.20E+05	-2.19E+05	2.19E+05	-4.86E+03	4.86E+03
65.	-3.52E+03	-2.48E+05	2.45E+05	-2.45E+05	2.42E+05	-3.71E+03	3.78E+03

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Table N–207. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–208. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.32E-02	-2.29E+04	2.29E+04	-2.26E+04	2.26E+04	-4.53E+03	4.53E+03
15.	0.336	-6.99E+04	6.99E+04	-6.92E+04	6.92E+04	-4.61E+03	4.61E+03
30.	3.32	-1.55E+05	1.55E+05	-1.54E+05	1.54E+05	-5.13E+03	5.13E+03
45.	11.3	-2.67E+05	2.67E+05	-2.66E+05	2.66E+05	-5.92E+03	5.92E+03
65.	-604.	-3.94E+05	3.92E+05	-3.94E+05	3.92E+05	-6.05E+03	6.04E+03

# TASK 1/ROLL MOTION/MODEL 5514

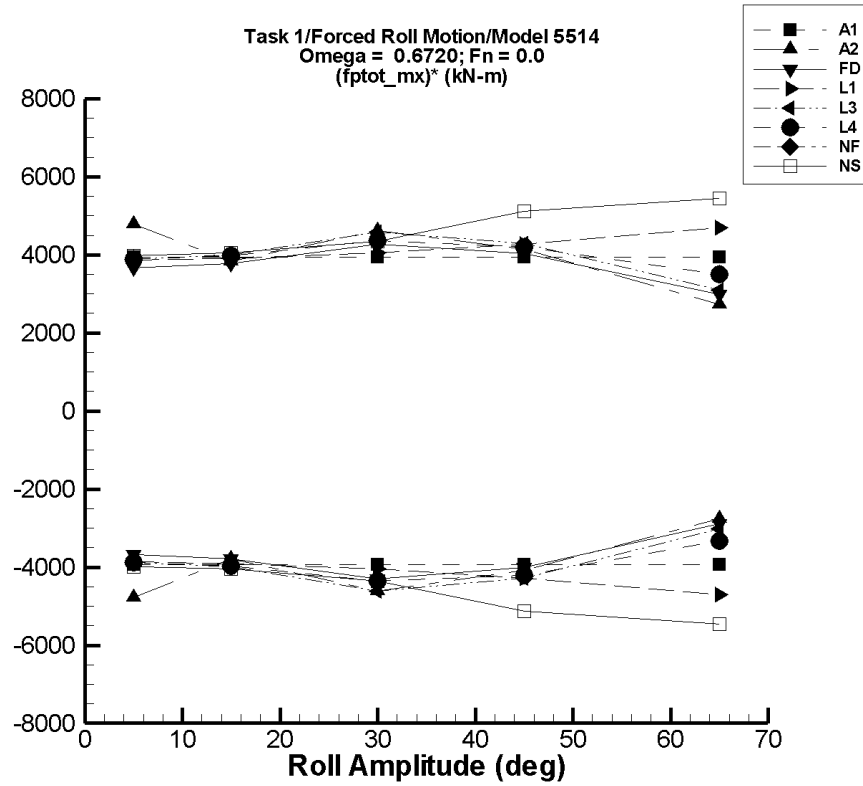


Figure N-27. Minimum and Maximum of  $(M_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.



Table N–209. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-2.31	-1.99E+04	1.99E+04	-1.97E+04	1.97E+04	-3.93E+03	3.94E+03
15.	-6.91	-5.96E+04	5.97E+04	-5.90E+04	5.90E+04	-3.93E+03	3.93E+03
30.	-13.8	-1.19E+05	1.19E+05	-1.18E+05	1.18E+05	-3.93E+03	3.93E+03
45.	-20.7	-1.79E+05	1.79E+05	-1.77E+05	1.77E+05	-3.93E+03	3.93E+03
65.	-29.9	-2.58E+05	2.59E+05	-2.55E+05	2.56E+05	-3.93E+03	3.93E+03

Table N–210. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-23.0	-2.41E+04	2.42E+04	-2.39E+04	2.39E+04	-4.77E+03	4.79E+03
15.	-190.	-5.77E+04	5.78E+04	-5.71E+04	5.72E+04	-3.79E+03	3.82E+03
30.	62.8	-1.40E+05	1.40E+05	-1.39E+05	1.39E+05	-4.62E+03	4.63E+03
45.	-2.07E+03	-1.86E+05	1.86E+05	-1.86E+05	1.85E+05	-4.08E+03	4.15E+03
65.	-4.51E+03	-1.91E+05	1.91E+05	-1.84E+05	1.73E+05	-2.75E+03	2.73E+03

Table N-211. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.678	-1.86E+04	1.86E+04	-1.84E+04	1.84E+04	-3.67E+03	3.67E+03
15.	37.1	-5.73E+04	5.73E+04	-5.67E+04	5.66E+04	-3.78E+03	3.77E+03
30.	406.	-1.31E+05	1.31E+05	-1.29E+05	1.29E+05	-4.31E+03	4.28E+03
45.	-229.	-1.82E+05	1.82E+05	-1.81E+05	1.81E+05	-4.01E+03	4.02E+03
65.	-3.44E+03	-2.00E+05	2.00E+05	-1.91E+05	1.91E+05	-2.89E+03	2.99E+03

Table N-212. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.45E-02	-1.94E+04	1.94E+04	-1.93E+04	1.93E+04	-3.87E+03	3.87E+03
15.	9.53	-5.89E+04	5.89E+04	-5.87E+04	5.86E+04	-3.91E+03	3.91E+03
30.	83.2	-1.22E+05	1.22E+05	-1.22E+05	1.21E+05	-4.05E+03	4.05E+03
45.	280.	-1.93E+05	1.93E+05	-1.92E+05	1.92E+05	-4.28E+03	4.27E+03
65.	815.	-3.07E+05	3.07E+05	-3.05E+05	3.05E+05	-4.71E+03	4.68E+03

Table N-213. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.17	-1.95E+04	1.95E+04	-1.94E+04	1.94E+04	-3.88E+03	3.88E+03
15.	26.6	-6.02E+04	6.02E+04	-5.99E+04	5.99E+04	-4.00E+03	3.99E+03
30.	362.	-1.39E+05	1.39E+05	-1.38E+05	1.38E+05	-4.61E+03	4.59E+03
45.	-42.7	-1.93E+05	1.93E+05	-1.93E+05	1.93E+05	-4.28E+03	4.28E+03
65.	-2.66E+03	-2.01E+05	2.01E+05	-1.99E+05	1.99E+05	-3.02E+03	3.10E+03

Table N-214. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-8.73	-1.96E+04	1.98E+04	-1.94E+04	1.95E+04	-3.89E+03	3.89E+03
15.	-94.8	-6.01E+04	5.98E+04	-5.97E+04	5.95E+04	-3.97E+03	3.97E+03
30.	-116.	-1.32E+05	1.33E+05	-1.31E+05	1.31E+05	-4.35E+03	4.37E+03
45.	-1.70E+03	-1.95E+05	1.92E+05	-1.91E+05	1.87E+05	-4.20E+03	4.19E+03
65.	-6.12E+03	-2.36E+05	2.36E+05	-2.23E+05	2.22E+05	-3.33E+03	3.51E+03

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Table N–215. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–216. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.847	-2.01E+04	2.01E+04	-1.99E+04	1.99E+04	-3.99E+03	3.99E+03
15.	-1.47	-6.14E+04	6.14E+04	-6.08E+04	6.08E+04	-4.05E+03	4.05E+03
30.	8.34	-1.31E+05	1.31E+05	-1.30E+05	1.30E+05	-4.35E+03	4.35E+03
45.	41.2	-2.31E+05	2.31E+05	-2.31E+05	2.31E+05	-5.13E+03	5.12E+03
65.	-311.	-3.55E+05	3.53E+05	-3.55E+05	3.53E+05	-5.45E+03	5.44E+03

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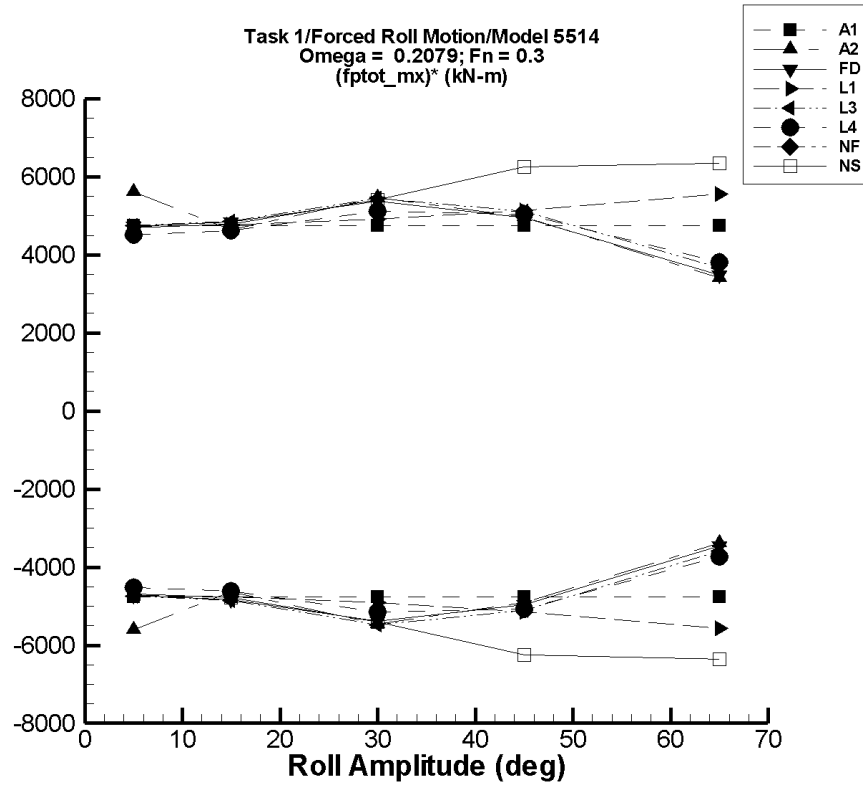


Figure N-28. Minimum and Maximum of  $(M_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N–217. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-0.276	-2.38E+04	2.38E+04	-2.38E+04	2.37E+04	-4.76E+03	4.75E+03
15.	-0.833	-7.13E+04	7.13E+04	-7.13E+04	7.12E+04	-4.75E+03	4.75E+03
30.	-1.67	-1.43E+05	1.43E+05	-1.43E+05	1.42E+05	-4.75E+03	4.75E+03
45.	-2.48	-2.14E+05	2.14E+05	-2.14E+05	2.14E+05	-4.75E+03	4.75E+03
65.	-3.66	-3.09E+05	3.09E+05	-3.09E+05	3.09E+05	-4.75E+03	4.75E+03

Table N–218. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-12.5	-2.81E+04	2.81E+04	-2.81E+04	2.80E+04	-5.61E+03	5.61E+03
15.	-118.	-6.95E+04	6.96E+04	-6.95E+04	6.95E+04	-4.63E+03	4.64E+03
30.	24.1	-1.64E+05	1.64E+05	-1.64E+05	1.64E+05	-5.47E+03	5.46E+03
45.	-649.	-2.79E+05	2.21E+05	-2.21E+05	2.23E+05	-4.90E+03	4.97E+03
65.	-726.	-2.22E+05	2.22E+05	-2.21E+05	2.21E+05	-3.39E+03	3.41E+03

Table N–219. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	0.255	-2.37E+04	2.37E+04	-2.36E+04	2.36E+04	-4.73E+03	4.73E+03
15.	13.9	-7.27E+04	7.27E+04	-7.26E+04	7.26E+04	-4.84E+03	4.84E+03
30.	156.	-1.62E+05	1.62E+05	-1.61E+05	1.61E+05	-5.39E+03	5.37E+03
45.	34.7	-2.23E+05	2.23E+05	-2.23E+05	2.23E+05	-4.97E+03	4.96E+03
65.	-1.13E+03	-2.26E+05	2.26E+05	-2.25E+05	2.25E+05	-3.45E+03	3.49E+03

Table N–220. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	0.600	-2.36E+04	2.36E+04	-2.36E+04	2.36E+04	-4.72E+03	4.72E+03
15.	11.0	-7.15E+04	7.15E+04	-7.15E+04	7.15E+04	-4.77E+03	4.77E+03
30.	86.1	-1.47E+05	1.47E+05	-1.47E+05	1.47E+05	-4.91E+03	4.91E+03
45.	284.	-2.31E+05	2.31E+05	-2.31E+05	2.31E+05	-5.14E+03	5.13E+03
65.	824.	-3.62E+05	3.62E+05	-3.62E+05	3.62E+05	-5.58E+03	5.55E+03

Table N–221. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.78	-2.37E+04	2.37E+04	-2.37E+04	2.37E+04	-4.74E+03	4.74E+03
15.	28.3	-7.28E+04	7.28E+04	-7.28E+04	7.28E+04	-4.86E+03	4.85E+03
30.	365.	-1.64E+05	1.64E+05	-1.64E+05	1.64E+05	-5.48E+03	5.45E+03
45.	86.8	-2.30E+05	2.30E+05	-2.30E+05	2.30E+05	-5.12E+03	5.11E+03
65.	-2.64E+03	-2.36E+05	2.36E+05	-2.36E+05	2.36E+05	-3.59E+03	3.67E+03

Table N–222. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	12.1	-2.28E+04	2.27E+04	-2.26E+04	2.26E+04	-4.53E+03	4.52E+03
15.	50.9	-6.93E+04	6.93E+04	-6.93E+04	6.92E+04	-4.62E+03	4.61E+03
30.	470.	-1.54E+05	1.54E+05	-1.54E+05	1.54E+05	-5.14E+03	5.11E+03
45.	660.	-2.28E+05	2.28E+05	-2.28E+05	2.28E+05	-5.07E+03	5.05E+03
65.	-1.70E+03	-2.48E+05	2.48E+05	-2.44E+05	2.46E+05	-3.73E+03	3.82E+03



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Table N–223. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–224. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{ptot}}$		Filtered $M_x^{\text{ptot}}$		Filtered $(M_x^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.12E-02	-2.37E+04	2.37E+04	-2.34E+04	2.34E+04	-4.69E+03	4.69E+03
15.	-0.265	-7.25E+04	7.25E+04	-7.18E+04	7.18E+04	-4.79E+03	4.79E+03
30.	-3.10	-1.63E+05	1.63E+05	-1.62E+05	1.62E+05	-5.41E+03	5.41E+03
45.	-11.9	-2.82E+05	2.81E+05	-2.81E+05	2.81E+05	-6.24E+03	6.24E+03
65.	-662.	-4.15E+05	4.12E+05	-4.14E+05	4.12E+05	-6.36E+03	6.35E+03

# TASK 1/ROLL MOTION/MODEL 5514

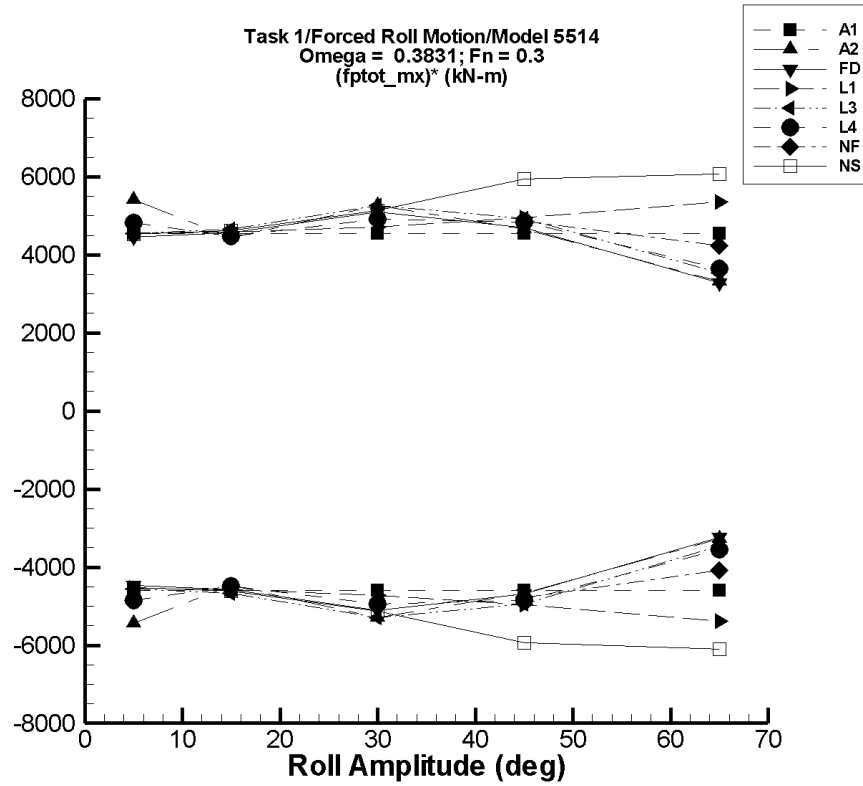


Figure N-29. Minimum and Maximum of  $(M_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N–225. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-1.12	-2.29E+04	2.28E+04	-2.30E+04	2.28E+04	-4.59E+03	4.55E+03
15.	-3.38	-6.86E+04	6.85E+04	-6.89E+04	6.82E+04	-4.59E+03	4.55E+03
30.	-6.75	-1.37E+05	1.37E+05	-1.38E+05	1.36E+05	-4.59E+03	4.55E+03
45.	-10.1	-2.06E+05	2.05E+05	-2.07E+05	2.05E+05	-4.59E+03	4.55E+03
65.	-14.6	-2.97E+05	2.97E+05	-2.98E+05	2.96E+05	-4.59E+03	4.55E+03

Table N–226. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-12.3	-2.72E+04	2.71E+04	-2.72E+04	2.71E+04	-5.45E+03	5.41E+03
15.	-113.	-6.69E+04	6.67E+04	-6.70E+04	6.65E+04	-4.46E+03	4.44E+03
30.	-48.4	-1.59E+05	1.58E+05	-1.59E+05	1.58E+05	-5.30E+03	5.26E+03
45.	-3.90E+03	-2.76E+05	2.12E+05	-2.14E+05	2.06E+05	-4.66E+03	4.65E+03
65.	-754.	-2.16E+05	2.17E+05	-2.14E+05	2.14E+05	-3.28E+03	3.31E+03

Table N–227. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.293	-2.24E+04	2.24E+04	-2.23E+04	2.23E+04	-4.46E+03	4.46E+03
15.	14.5	-6.88E+04	6.88E+04	-6.85E+04	6.85E+04	-4.57E+03	4.57E+03
30.	158.	-1.54E+05	1.54E+05	-1.53E+05	1.53E+05	-5.11E+03	5.10E+03
45.	-125.	-2.12E+05	2.12E+05	-2.11E+05	2.11E+05	-4.70E+03	4.70E+03
65.	-1.28E+03	-2.14E+05	2.14E+05	-2.12E+05	2.12E+05	-3.25E+03	3.28E+03

Table N–228. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.429	-2.27E+04	2.27E+04	-2.27E+04	2.27E+04	-4.54E+03	4.54E+03
15.	10.1	-6.88E+04	6.88E+04	-6.87E+04	6.87E+04	-4.58E+03	4.58E+03
30.	82.3	-1.42E+05	1.42E+05	-1.42E+05	1.42E+05	-4.72E+03	4.72E+03
45.	276.	-2.23E+05	2.23E+05	-2.23E+05	2.23E+05	-4.96E+03	4.94E+03
65.	801.	-3.50E+05	3.50E+05	-3.49E+05	3.49E+05	-5.39E+03	5.36E+03

Table N-229. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.68	-2.28E+04	2.28E+04	-2.28E+04	2.28E+04	-4.55E+03	4.55E+03
15.	26.7	-7.01E+04	7.01E+04	-7.00E+04	7.00E+04	-4.67E+03	4.66E+03
30.	352.	-1.59E+05	1.59E+05	-1.58E+05	1.58E+05	-5.29E+03	5.27E+03
45.	185.	-2.22E+05	2.22E+05	-2.22E+05	2.22E+05	-4.94E+03	4.93E+03
65.	-2.44E+03	-2.28E+05	2.28E+05	-2.27E+05	2.27E+05	-3.45E+03	3.53E+03

Table N-230. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-11.2	-2.45E+04	2.42E+04	-2.43E+04	2.41E+04	-4.86E+03	4.83E+03
15.	147.	-6.74E+04	6.76E+04	-6.72E+04	6.72E+04	-4.49E+03	4.47E+03
30.	581.	-1.49E+05	1.48E+05	-1.48E+05	1.48E+05	-4.95E+03	4.91E+03
45.	395.	-2.20E+05	2.19E+05	-2.18E+05	2.18E+05	-4.85E+03	4.84E+03
65.	-2.44E+03	-2.39E+05	2.42E+05	-2.33E+05	2.34E+05	-3.54E+03	3.64E+03

Table N-231. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	-2.36E+03	-1.44E+05	1.40E+05	-1.43E+05	1.40E+05	-4.67E+03	4.73E+03
45.	-3.47E+03	-2.21E+05	2.18E+05	-2.19E+05	2.15E+05	-4.79E+03	4.87E+03
65.	-5.08E+03	-2.77E+05	2.74E+05	-2.70E+05	2.71E+05	-4.07E+03	4.24E+03

Table N-232. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	1.05E-02	-2.29E+04	2.29E+04	-2.26E+04	2.26E+04	-4.53E+03	4.53E+03
15.	0.441	-6.99E+04	6.99E+04	-6.92E+04	6.92E+04	-4.61E+03	4.61E+03
30.	4.80	-1.55E+05	1.55E+05	-1.54E+05	1.54E+05	-5.13E+03	5.13E+03
45.	21.7	-2.68E+05	2.68E+05	-2.67E+05	2.67E+05	-5.94E+03	5.94E+03
65.	-561.	-3.97E+05	3.95E+05	-3.97E+05	3.94E+05	-6.09E+03	6.08E+03

# Task 1/ROLL MOTION/MODEL 5514

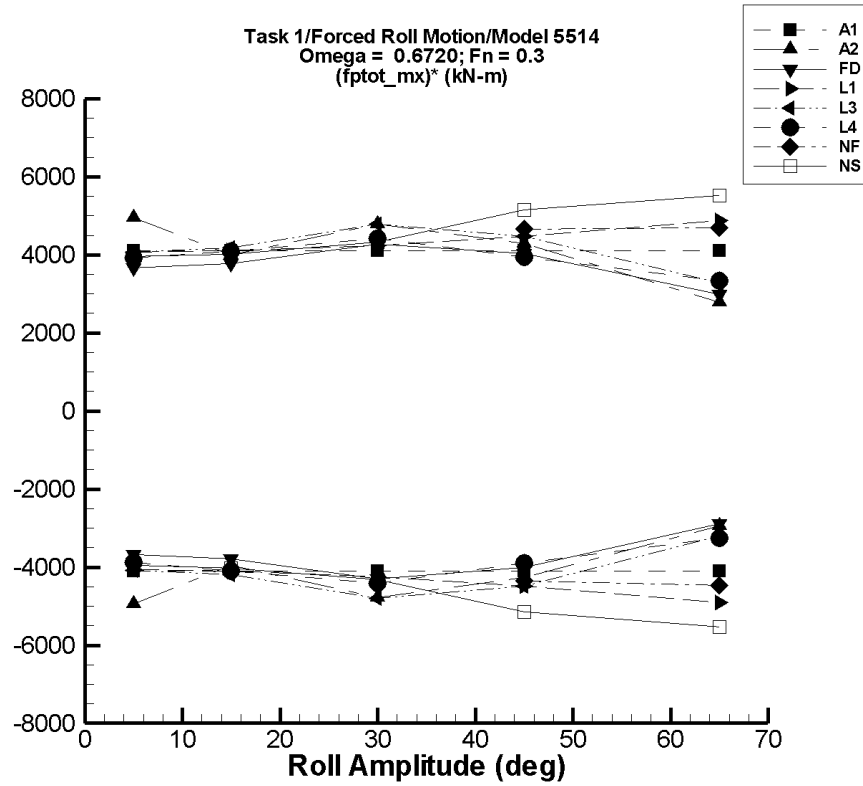


Figure N-30. Minimum and Maximum of  $(M_x^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-233. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-3.04	-2.07E+04	2.08E+04	-2.05E+04	2.06E+04	-4.10E+03	4.11E+03
15.	-9.10	-6.22E+04	6.24E+04	-6.15E+04	6.16E+04	-4.10E+03	4.11E+03
30.	-18.2	-1.24E+05	1.25E+05	-1.23E+05	1.23E+05	-4.10E+03	4.11E+03
45.	-27.3	-1.87E+05	1.87E+05	-1.85E+05	1.85E+05	-4.10E+03	4.11E+03
65.	-39.5	-2.70E+05	2.70E+05	-2.67E+05	2.67E+05	-4.10E+03	4.11E+03

Table N-234. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-23.7	-2.50E+04	2.50E+04	-2.47E+04	2.47E+04	-4.94E+03	4.95E+03
15.	-192.	-6.02E+04	6.04E+04	-5.96E+04	5.97E+04	-3.96E+03	3.99E+03
30.	58.4	-1.45E+05	1.46E+05	-1.43E+05	1.44E+05	-4.78E+03	4.79E+03
45.	-2.07E+03	-1.94E+05	1.95E+05	-1.94E+05	1.91E+05	-4.26E+03	4.29E+03
65.	-4.52E+03	-2.03E+05	2.03E+05	-1.96E+05	1.77E+05	-2.94E+03	2.79E+03



Table N-235. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.679	-1.86E+04	1.86E+04	-1.84E+04	1.84E+04	-3.67E+03	3.67E+03
15.	37.1	-5.73E+04	5.73E+04	-5.67E+04	5.66E+04	-3.78E+03	3.77E+03
30.	406.	-1.31E+05	1.31E+05	-1.29E+05	1.29E+05	-4.31E+03	4.28E+03
45.	-229.	-1.82E+05	1.82E+05	-1.81E+05	1.81E+05	-4.01E+03	4.02E+03
65.	-3.44E+03	-2.00E+05	2.00E+05	-1.91E+05	1.91E+05	-2.89E+03	2.99E+03

Table N-236. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.137	-2.04E+04	2.04E+04	-2.03E+04	2.03E+04	-4.06E+03	4.06E+03
15.	9.66	-6.18E+04	6.18E+04	-6.16E+04	6.16E+04	-4.11E+03	4.10E+03
30.	83.3	-1.28E+05	1.28E+05	-1.27E+05	1.27E+05	-4.25E+03	4.24E+03
45.	280.	-2.02E+05	2.02E+05	-2.01E+05	2.01E+05	-4.48E+03	4.46E+03
65.	815.	-3.20E+05	3.20E+05	-3.18E+05	3.18E+05	-4.90E+03	4.88E+03

Table N-237. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.30	-2.05E+04	2.05E+04	-2.04E+04	2.04E+04	-4.08E+03	4.08E+03
15.	26.7	-6.31E+04	6.31E+04	-6.28E+04	6.28E+04	-4.19E+03	4.19E+03
30.	362.	-1.45E+05	1.45E+05	-1.44E+05	1.44E+05	-4.81E+03	4.78E+03
45.	-42.6	-2.02E+05	2.02E+05	-2.02E+05	2.02E+05	-4.48E+03	4.48E+03
65.	-2.66E+03	-2.12E+05	2.12E+05	-2.11E+05	2.10E+05	-3.20E+03	3.28E+03

Table N-238. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_x^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	35.9	-1.97E+04	2.08E+04	-1.94E+04	1.97E+04	-3.88E+03	3.93E+03
15.	119.	-6.18E+04	6.15E+04	-6.14E+04	6.15E+04	-4.10E+03	4.09E+03
30.	270.	-1.34E+05	1.35E+05	-1.32E+05	1.33E+05	-4.41E+03	4.42E+03
45.	-1.41E+03	-1.86E+05	1.81E+05	-1.76E+05	1.76E+05	-3.89E+03	3.95E+03
65.	-5.59E+03	-2.60E+05	2.40E+05	-2.17E+05	2.11E+05	-3.26E+03	3.33E+03

Table N-239. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	-3.81E+03	-1.30E+05	1.31E+05	-1.30E+05	1.32E+05	-4.20E+03	4.52E+03
45.	-5.05E+03	-2.02E+05	2.05E+05	-2.01E+05	2.04E+05	-4.36E+03	4.65E+03
65.	-3.82E+03	-2.98E+05	3.17E+05	-2.94E+05	3.01E+05	-4.47E+03	4.69E+03

Table N-240. Minimum and Maximum of  $M_x^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-0.867	-2.00E+04	2.00E+04	-1.98E+04	1.98E+04	-3.96E+03	3.96E+03
15.	-1.35	-6.09E+04	6.09E+04	-6.03E+04	6.03E+04	-4.02E+03	4.02E+03
30.	9.35	-1.30E+05	1.30E+05	-1.30E+05	1.30E+05	-4.32E+03	4.32E+03
45.	41.2	-2.32E+05	2.33E+05	-2.32E+05	2.32E+05	-5.15E+03	5.15E+03
65.	-280.	-3.60E+05	3.59E+05	-3.60E+05	3.59E+05	-5.53E+03	5.52E+03

# TASK 1/ROLL MOTION/MODEL 5514

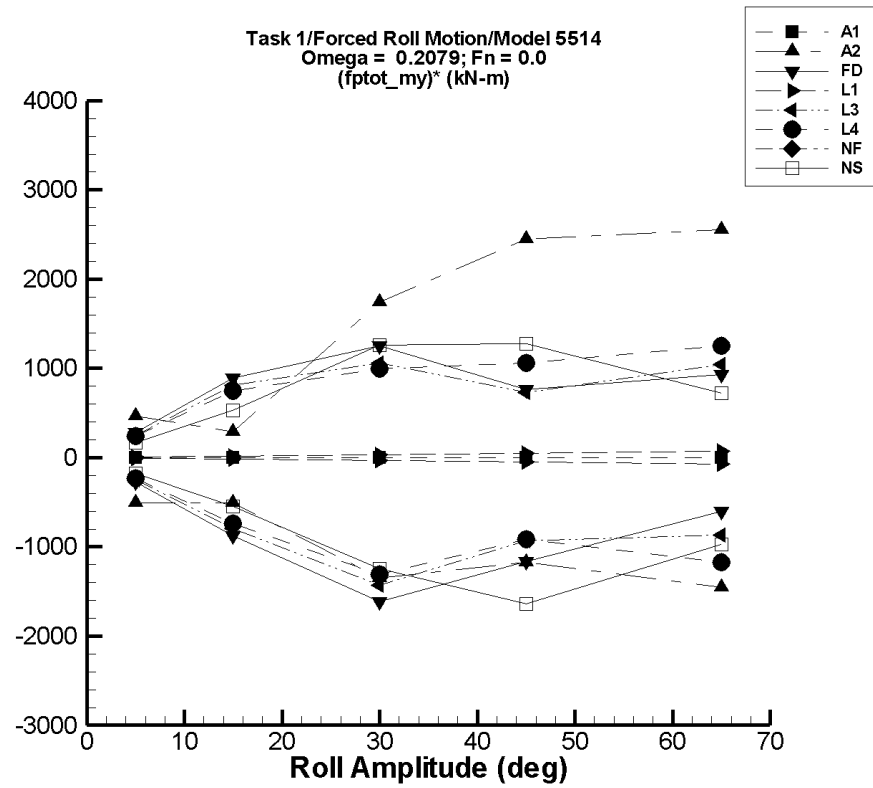


Figure N-31. Minimum and Maximum of  $(M_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-241. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.33E-04	-0.244	0.244	-6.74E-02	6.82E-02	-1.36E-02	1.36E-02
15.	1.00E-03	-0.733	0.733	-0.202	0.205	-1.35E-02	1.36E-02
30.	2.00E-03	-1.47	1.47	-0.404	0.409	-1.35E-02	1.36E-02
45.	3.00E-03	-2.20	2.20	-0.607	0.614	-1.35E-02	1.36E-02
65.	4.33E-03	-3.17	3.18	-0.876	0.887	-1.35E-02	1.36E-02

Table N-242. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	711.	5.58E+03	-509.	464.
15.	8.28E+03	724.	1.27E+04	706.	1.26E+04	-505.	289.
30.	4.11E+04	-2.84E+05	9.66E+04	612.	9.33E+04	-1.35E+03	1.74E+03
45.	5.33E+04	-5.97E+05	7.43E+05	731.	1.64E+05	-1.17E+03	2.45E+03
65.	1.17E+04	-8.33E+04	6.35E+05	-8.28E+04	1.77E+05	-1.45E+03	2.55E+03

Table N-243. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	1.82E+04	1.69E+04	1.97E+04	1.69E+04	1.96E+04	-271.	281.
15.	3.00E+04	1.69E+04	4.35E+04	1.69E+04	4.34E+04	-877.	894.
30.	6.51E+04	1.69E+04	1.03E+05	1.68E+04	1.03E+05	-1.61E+03	1.25E+03
45.	6.95E+04	1.69E+04	1.05E+05	1.70E+04	1.04E+05	-1.17E+03	764.
65.	4.22E+04	2.83E+03	1.05E+05	2.91E+03	1.03E+05	-604.	933.

Table N-244. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	27.9	-1.57E-02	55.9	2.91E-02	55.9	-5.58	5.59
15.	251.	-3.52E-02	503.	0.364	503.	-16.7	16.8
30.	1.00E+03	-4.51E-02	2.01E+03	1.53	2.01E+03	-33.4	33.5
45.	2.26E+03	-5.11E-02	4.53E+03	3.48	4.52E+03	-50.2	50.3
65.	4.72E+03	-5.11E-02	9.44E+03	7.34	9.44E+03	-72.5	72.7

Table N-245. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.06E+03	812.	3.32E+03	814.	3.32E+03	-249.	252.
15.	1.33E+04	1.26E+03	2.55E+04	1.28E+03	2.55E+04	-800.	814.
30.	4.59E+04	2.77E+03	7.77E+04	2.83E+03	7.77E+04	-1.43E+03	1.06E+03
45.	4.75E+04	5.28E+03	8.05E+04	5.43E+03	8.02E+04	-935.	727.
65.	1.69E+04	-3.94E+04	8.55E+04	-3.93E+04	8.46E+04	-865.	1.04E+03

Table N-246. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.07E+03	900.	3.27E+03	912.	3.26E+03	-231.	238.
15.	1.33E+04	2.12E+03	2.45E+04	2.22E+03	2.45E+04	-738.	744.
30.	4.56E+04	5.92E+03	7.55E+04	6.38E+03	7.54E+04	-1.31E+03	991.
45.	4.72E+04	4.47E+03	9.57E+04	5.97E+03	9.47E+04	-915.	1.06E+03
65.	2.15E+04	-7.79E+04	1.08E+05	-5.47E+04	1.03E+05	-1.17E+03	1.26E+03

Table N-247. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-248. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.17E+03	199.	2.05E+03	275.	2.02E+03	-179.	171.
15.	1.09E+04	2.37E+03	1.92E+04	2.66E+03	1.89E+04	-549.	533.
30.	4.82E+04	1.03E+04	8.68E+04	1.08E+04	8.62E+04	-1.25E+03	1.26E+03
45.	9.61E+04	2.15E+04	1.54E+05	2.24E+04	1.53E+05	-1.64E+03	1.27E+03
65.	1.09E+05	4.10E+04	1.93E+05	4.56E+04	1.56E+05	-972.	722.



# TASK 1/ROLL MOTION/MODEL 5514

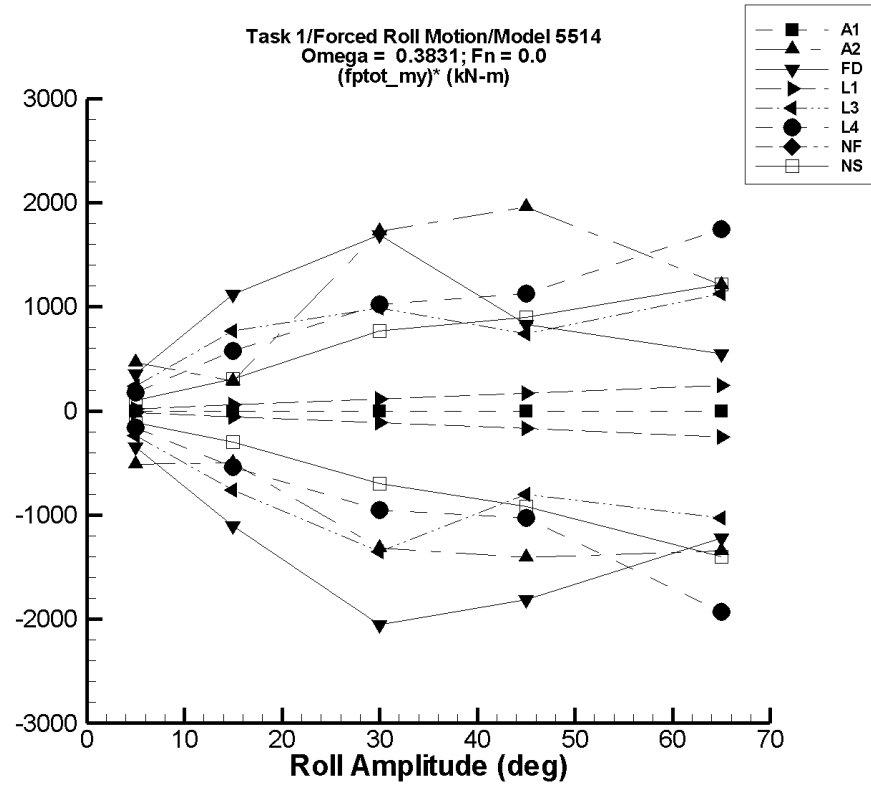


Figure N-32. Minimum and Maximum of  $(M_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N–249. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	5.34E-04	-0.682	0.539	-0.432	0.465	-8.64E-02	9.28E-02
15.	1.60E-03	-2.05	1.62	-1.29	1.39	-8.64E-02	9.28E-02
30.	3.20E-03	-4.09	3.23	-2.59	2.79	-8.64E-02	9.28E-02
45.	4.81E-03	-6.14	4.85	-3.88	4.18	-8.64E-02	9.28E-02
65.	6.94E-03	-8.87	7.00	-5.61	6.04	-8.64E-02	9.28E-02

Table N–250. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	3.26E+03	724.	5.59E+03	703.	5.58E+03	-511.	464.
15.	8.28E+03	724.	1.27E+04	823.	1.26E+04	-497.	285.
30.	4.05E+04	-2.84E+05	9.58E+04	1.07E+03	9.23E+04	-1.31E+03	1.73E+03
45.	6.21E+04	-5.97E+05	7.43E+05	-1.10E+03	1.50E+05	-1.41E+03	1.96E+03
65.	5.62E+03	-8.33E+04	9.87E+04	-8.17E+04	8.42E+04	-1.34E+03	1.21E+03

Table N-251. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	1.86E+04	1.69E+04	2.05E+04	1.69E+04	2.04E+04	-346.	356.
15.	3.36E+04	1.69E+04	5.06E+04	1.70E+04	5.03E+04	-1.10E+03	1.12E+03
30.	7.91E+04	1.69E+04	1.30E+05	1.75E+04	1.30E+05	-2.05E+03	1.69E+03
45.	9.99E+04	1.69E+04	1.39E+05	1.83E+04	1.37E+05	-1.81E+03	830.
65.	9.95E+04	1.70E+04	1.39E+05	2.01E+04	1.35E+05	-1.22E+03	545.

Table N-252. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	95.5	1.05E-03	191.	0.513	191.	-19.0	19.1
15.	859.	0.220	1.72E+03	4.82	1.72E+03	-57.0	57.3
30.	3.44E+03	0.801	6.88E+03	19.2	6.87E+03	-114.	115.
45.	7.73E+03	1.63	1.55E+04	43.0	1.55E+04	-171.	172.
65.	1.61E+04	3.21	3.23E+04	89.5	3.23E+04	-247.	248.

Table N-253. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.12E+03	947.	3.32E+03	955.	3.31E+03	-234.	237.
15.	1.39E+04	2.47E+03	2.55E+04	2.47E+03	2.54E+04	-761.	770.
30.	4.82E+04	7.62E+03	7.77E+04	7.57E+03	7.77E+04	-1.35E+03	986.
45.	5.23E+04	1.62E+04	8.67E+04	1.62E+04	8.58E+04	-802.	744.
65.	2.76E+04	-3.93E+04	1.04E+05	-3.91E+04	1.01E+05	-1.03E+03	1.12E+03

Table N-254. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.15E+03	1.28E+03	3.13E+03	1.34E+03	3.04E+03	-164.	177.
15.	1.39E+04	5.48E+03	2.31E+04	5.84E+03	2.26E+04	-540.	579.
30.	4.86E+04	1.75E+04	8.01E+04	2.01E+04	7.93E+04	-951.	1.02E+03
45.	5.49E+04	7.22E+03	1.09E+05	8.66E+03	1.06E+05	-1.03E+03	1.13E+03
65.	4.15E+04	-1.01E+05	1.70E+05	-8.40E+04	1.55E+05	-1.93E+03	1.75E+03

Table N-255. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-256. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.15E+03	442.	1.69E+03	600.	1.65E+03	-109.	101.
15.	1.06E+04	5.40E+03	1.59E+04	6.12E+03	1.53E+04	-301.	309.
30.	4.72E+04	2.22E+04	7.11E+04	2.63E+04	7.03E+04	-698.	768.
45.	9.63E+04	3.66E+04	1.39E+05	5.50E+04	1.37E+05	-918.	896.
65.	1.11E+05	-2.51E+04	2.22E+05	2.02E+04	1.90E+05	-1.40E+03	1.22E+03

# TASK 1/ROLL MOTION/MODEL 5514

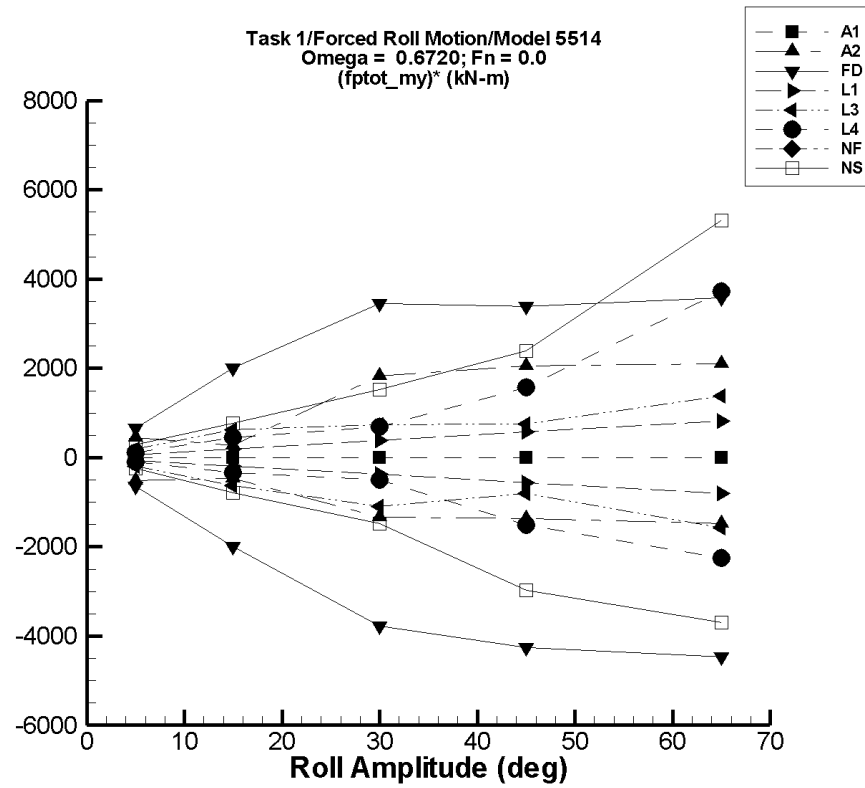


Figure N-33. Minimum and Maximum of  $(M_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-257. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
	<b>Mean (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m/°)</b>	<b>Max. (kN-m/°)</b>
5.	9.94E-03	-3.54	3.72	-2.96	2.85	-0.593	0.569
15.	2.98E-02	-10.6	11.2	-8.87	8.56	-0.593	0.569
30.	5.96E-02	-21.2	22.3	-17.7	17.1	-0.593	0.569
45.	8.94E-02	-31.9	33.5	-26.6	25.7	-0.593	0.569
65.	0.129	-46.0	48.4	-38.4	37.1	-0.593	0.569

Table N-258. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
	<b>Mean (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m/°)</b>	<b>Max. (kN-m/°)</b>
5.	3.26E+03	722.	5.59E+03	713.	5.49E+03	-510.	447.
15.	8.29E+03	716.	1.26E+04	1.17E+03	1.23E+04	-475.	266.
30.	3.88E+04	-2.84E+05	9.65E+04	-1.10E+03	9.36E+04	-1.33E+03	1.83E+03
45.	6.23E+04	702.	6.35E+05	903.	1.55E+05	-1.36E+03	2.05E+03
65.	1.38E+04	-8.32E+04	7.43E+05	-8.20E+04	1.50E+05	-1.47E+03	2.10E+03

Table N-259. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.00E+04	1.67E+04	2.33E+04	1.67E+04	2.33E+04	-644.	658.
15.	4.54E+04	1.52E+04	7.57E+04	1.55E+04	7.55E+04	-1.99E+03	2.01E+03
30.	1.25E+05	1.04E+04	2.30E+05	1.17E+04	2.28E+05	-3.77E+03	3.46E+03
45.	1.98E+05	2.35E+03	3.55E+05	6.15E+03	3.50E+05	-4.25E+03	3.39E+03
65.	2.88E+05	-1.31E+04	5.29E+05	-2.35E+03	5.21E+05	-4.46E+03	3.59E+03

Table N-260. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	306.	-10.1	622.	-4.96	623.	-62.2	63.4
15.	2.75E+03	-90.8	5.60E+03	-43.7	5.61E+03	-187.	190.
30.	1.10E+04	-362.	2.24E+04	-174.	2.24E+04	-373.	380.
45.	2.48E+04	-814.	5.04E+04	-391.	5.04E+04	-560.	570.
65.	5.17E+04	-1.70E+03	1.05E+05	-816.	1.05E+05	-808.	824.



Table N-261. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.33E+03	1.38E+03	3.31E+03	1.40E+03	3.29E+03	-188.	192.
15.	1.58E+04	6.35E+03	2.54E+04	6.37E+03	2.53E+04	-627.	631.
30.	5.59E+04	2.31E+04	7.82E+04	2.32E+04	7.80E+04	-1.09E+03	737.
45.	6.97E+04	3.21E+04	1.07E+05	3.34E+04	1.03E+05	-806.	747.
65.	6.31E+04	-4.10E+04	1.63E+05	-3.97E+04	1.53E+05	-1.58E+03	1.38E+03

Table N-262. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.38E+03	1.69E+03	3.22E+03	1.89E+03	2.98E+03	-98.7	119.
15.	1.50E+04	8.02E+03	2.29E+04	9.83E+03	2.18E+04	-345.	453.
30.	5.07E+04	3.27E+04	7.41E+04	3.55E+04	7.14E+04	-506.	691.
45.	6.18E+04	-1.46E+04	1.53E+05	-6.30E+03	1.32E+05	-1.51E+03	1.57E+03
65.	5.07E+04	-1.67E+05	3.46E+05	-9.53E+04	2.93E+05	-2.25E+03	3.72E+03

Table N-263. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-264. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.03E+03	-265.	2.63E+03	-200.	2.50E+03	-247.	292.
15.	9.37E+03	-3.41E+03	2.38E+04	-2.34E+03	2.10E+04	-780.	776.
30.	4.18E+04	-5.07E+03	9.63E+04	-2.76E+03	8.74E+04	-1.49E+03	1.52E+03
45.	8.87E+04	-7.26E+04	2.15E+05	-4.52E+04	1.96E+05	-2.98E+03	2.39E+03
65.	9.89E+04	-3.08E+05	5.18E+05	-1.41E+05	4.44E+05	-3.69E+03	5.31E+03

# TASK 1/ROLL MOTION/MODEL 5514

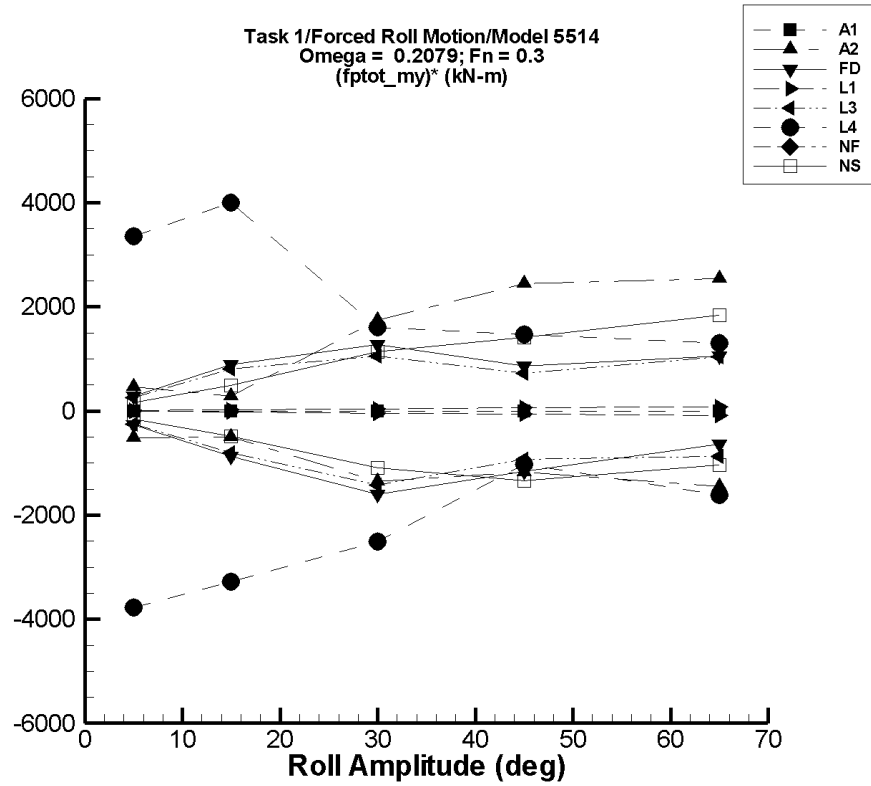


Figure N-34. Minimum and Maximum of  $(M_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-265. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.91E-03	-4.14	4.08	-3.10	3.06	-0.619	0.614
15.	-2.97E-02	-12.4	12.2	-9.31	9.17	-0.619	0.614
30.	-5.95E-02	-24.8	24.5	-18.6	18.3	-0.619	0.614
45.	-8.92E-02	-37.2	36.7	-27.9	27.5	-0.619	0.614
65.	-0.129	-53.8	53.0	-40.3	39.8	-0.619	0.614

Table N-266. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	710.	5.58E+03	-509.	464.
15.	8.28E+03	723.	1.27E+04	704.	1.26E+04	-505.	289.
30.	4.11E+04	-2.84E+05	9.66E+04	609.	9.33E+04	-1.35E+03	1.74E+03
45.	5.33E+04	-5.97E+05	7.43E+05	727.	1.64E+05	-1.17E+03	2.45E+03
65.	1.17E+04	-8.32E+04	6.35E+05	-8.28E+04	1.77E+05	-1.45E+03	2.55E+03

Table N-267. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	1.82E+04	1.69E+04	1.97E+04	1.69E+04	1.96E+04	-270.	281.
15.	3.00E+04	1.69E+04	4.35E+04	1.69E+04	4.34E+04	-875.	895.
30.	6.51E+04	1.68E+04	1.03E+05	1.69E+04	1.03E+05	-1.61E+03	1.27E+03
45.	6.95E+04	1.68E+04	1.09E+05	1.72E+04	1.08E+05	-1.16E+03	864.
65.	4.21E+04	827.	1.13E+05	975.	1.11E+05	-633.	1.06E+03

Table N-268. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	4.36E+04	4.36E+04	4.37E+04	4.36E+04	4.37E+04	-8.14	6.61
15.	4.39E+04	4.36E+04	4.42E+04	4.36E+04	4.42E+04	-20.0	19.4
30.	4.48E+04	4.36E+04	4.60E+04	4.36E+04	4.59E+04	-39.2	38.8
45.	4.63E+04	4.36E+04	4.89E+04	4.36E+04	4.89E+04	-58.5	58.4
65.	4.91E+04	4.36E+04	5.46E+04	4.36E+04	5.46E+04	-84.4	84.4

Table N-269. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.57E+04	4.44E+04	4.69E+04	4.44E+04	4.69E+04	-248.	252.
15.	5.69E+04	4.49E+04	6.91E+04	4.50E+04	6.91E+04	-797.	812.
30.	8.96E+04	4.67E+04	1.21E+05	4.68E+04	1.21E+05	-1.43E+03	1.06E+03
45.	9.15E+04	4.96E+04	1.25E+05	4.98E+04	1.24E+05	-927.	728.
65.	6.13E+04	4.28E+03	1.30E+05	4.32E+03	1.29E+05	-877.	1.05E+03

Table N-270. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.33E+04	1.39E+04	6.08E+04	2.44E+04	6.00E+04	-3.77E+03	3.35E+03
15.	4.84E+04	-8.51E+03	1.15E+05	-922.	1.08E+05	-3.29E+03	4.00E+03
30.	6.86E+04	-1.82E+04	1.22E+05	-6.77E+03	1.17E+05	-2.51E+03	1.61E+03
45.	6.30E+04	2.96E+03	1.48E+05	1.69E+04	1.29E+05	-1.03E+03	1.47E+03
65.	3.25E+04	-8.49E+04	1.36E+05	-7.21E+04	1.17E+05	-1.61E+03	1.30E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-271. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-272. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.16E+03	228.	1.97E+03	341.	1.95E+03	-163.	158.
15.	1.07E+04	2.91E+03	1.84E+04	3.47E+03	1.80E+04	-482.	489.
30.	4.71E+04	1.36E+04	8.20E+04	1.44E+04	8.12E+04	-1.09E+03	1.14E+03
45.	9.15E+04	2.96E+04	1.60E+05	3.12E+04	1.55E+05	-1.34E+03	1.42E+03
65.	9.77E+04	1.25E+04	2.49E+05	2.98E+04	2.18E+05	-1.04E+03	1.84E+03

# TASK 1/ROLL MOTION/MODEL 5514

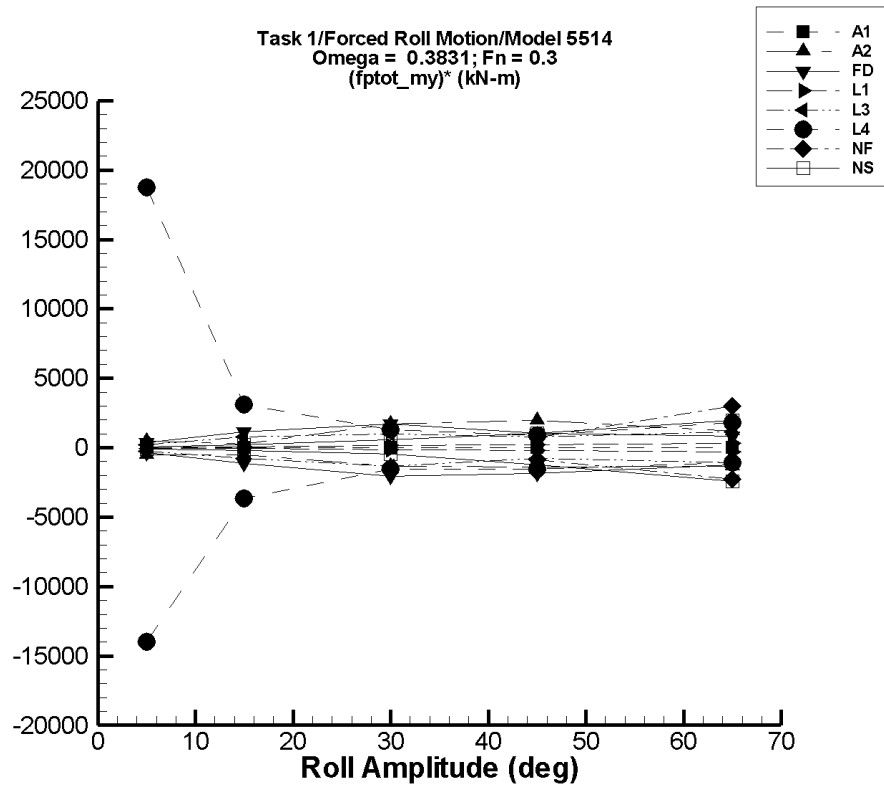


Figure N–35. Minimum and Maximum of  $(M_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.



Table N-273. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.21E-02	-3.00	1.98	-1.91	1.88	-0.388	0.369
15.	9.62E-02	-8.99	5.93	-5.73	5.63	-0.388	0.369
30.	0.192	-18.0	11.9	-11.5	11.3	-0.388	0.369
45.	0.289	-27.0	17.8	-17.2	16.9	-0.388	0.369
65.	0.417	-39.0	25.7	-24.8	24.4	-0.388	0.369

Table N-274. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	702.	5.57E+03	-511.	463.
15.	8.28E+03	722.	1.27E+04	822.	1.26E+04	-497.	285.
30.	4.05E+04	-2.84E+05	9.58E+04	1.07E+03	9.23E+04	-1.31E+03	1.73E+03
45.	6.21E+04	-5.97E+05	7.43E+05	-1.12E+03	1.50E+05	-1.41E+03	1.96E+03
65.	5.62E+03	-8.32E+04	9.87E+04	-8.17E+04	8.42E+04	-1.34E+03	1.21E+03

Table N-275. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	1.87E+04	1.69E+04	2.05E+04	1.69E+04	2.05E+04	-348.	360.
15.	3.37E+04	1.68E+04	5.09E+04	1.71E+04	5.06E+04	-1.11E+03	1.13E+03
30.	7.96E+04	1.67E+04	1.32E+05	1.76E+04	1.31E+05	-2.06E+03	1.72E+03
45.	1.01E+05	1.64E+04	1.49E+05	1.87E+04	1.48E+05	-1.83E+03	1.04E+03
65.	1.02E+05	1.60E+04	1.59E+05	2.05E+04	1.55E+05	-1.25E+03	816.

Table N-276. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$	$\langle M_y^{\text{ptot}} \rangle$	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	4.37E+04	4.36E+04	4.38E+04	4.36E+04	4.38E+04	-22.4	24.2
15.	4.46E+04	4.36E+04	4.56E+04	4.36E+04	4.56E+04	-67.2	68.0
30.	4.77E+04	4.36E+04	5.17E+04	4.37E+04	5.17E+04	-134.	135.
45.	5.28E+04	4.37E+04	6.19E+04	4.37E+04	6.19E+04	-201.	203.
65.	6.28E+04	4.37E+04	8.18E+04	4.39E+04	8.18E+04	-291.	293.

Table N-277. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.57E+04	4.46E+04	4.69E+04	4.46E+04	4.69E+04	-230.	234.
15.	5.77E+04	4.64E+04	6.91E+04	4.64E+04	6.91E+04	-751.	760.
30.	9.24E+04	5.25E+04	1.21E+05	5.24E+04	1.21E+05	-1.33E+03	967.
45.	9.74E+04	6.26E+04	1.32E+05	6.27E+04	1.31E+05	-771.	754.
65.	7.42E+04	4.42E+03	1.53E+05	4.67E+03	1.49E+05	-1.07E+03	1.16E+03

Table N-278. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.17E+04	-3.67E+04	1.47E+05	-2.83E+04	1.35E+05	-1.40E+04	1.87E+04
15.	4.42E+04	-2.29E+04	9.90E+04	-1.06E+04	9.04E+04	-3.65E+03	3.08E+03
30.	7.29E+04	1.56E+04	1.20E+05	2.66E+04	1.11E+05	-1.54E+03	1.28E+03
45.	7.26E+04	-1.42E+04	1.38E+05	3.45E+03	1.12E+05	-1.54E+03	873.
65.	4.44E+04	-3.73E+04	1.69E+05	-2.52E+04	1.61E+05	-1.07E+03	1.80E+03

Table N-279. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	2.13E+04	-1.71E+04	5.77E+04	-1.44E+04	5.70E+04	-1.19E+03	1.19E+03
45.	3.22E+04	-8.68E+03	7.06E+04	-7.07E+03	6.58E+04	-872.	748.
65.	-3.32E+04	-1.92E+05	1.67E+05	-1.81E+05	1.62E+05	-2.28E+03	3.00E+03

Table N-280. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.12E+03	563.	1.48E+03	729.	1.45E+03	-78.1	66.8
15.	1.04E+04	6.71E+03	1.36E+04	7.50E+03	1.33E+04	-190.	199.
30.	4.54E+04	2.99E+04	6.41E+04	3.14E+04	6.33E+04	-469.	596.
45.	8.92E+04	1.60E+04	1.46E+05	3.37E+04	1.37E+05	-1.23E+03	1.06E+03
65.	9.20E+04	-1.10E+05	2.92E+05	-6.38E+04	2.20E+05	-2.40E+03	1.96E+03

# TASK 1/ROLL MOTION/MODEL 5514

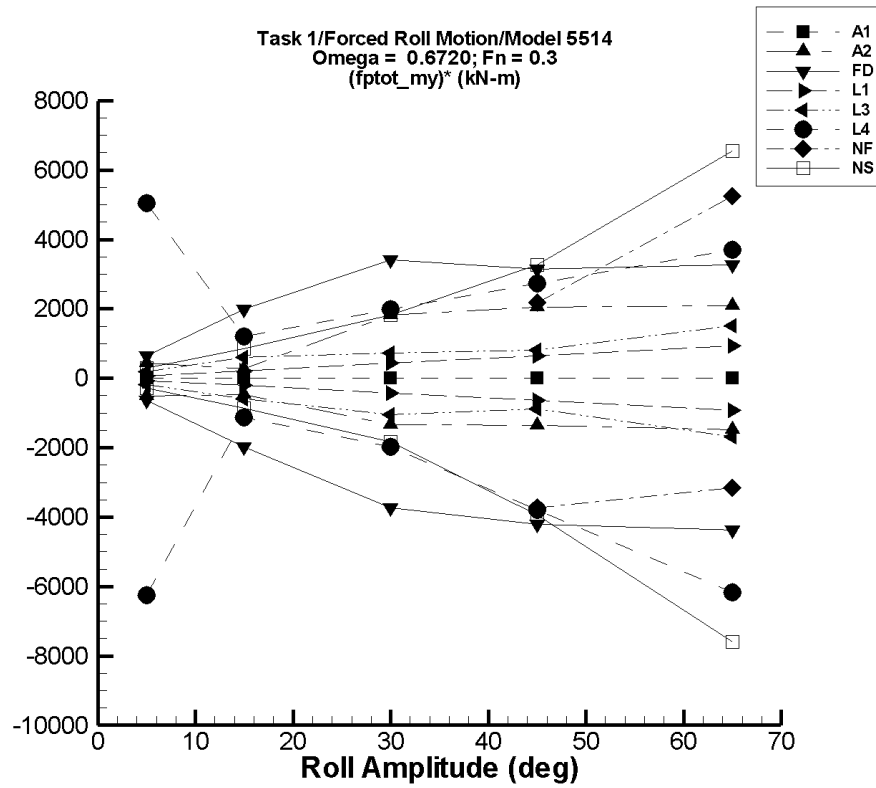


Figure N-36. Minimum and Maximum of  $(M_y^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-281. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.01E-03	-3.37	3.33	-3.33	3.26	-0.665	0.655
15.	-2.70E-02	-10.1	9.98	-9.99	9.79	-0.664	0.654
30.	-5.40E-02	-20.2	20.0	-20.0	19.6	-0.664	0.654
45.	-8.10E-02	-30.3	29.9	-30.0	29.4	-0.664	0.654
65.	-0.117	-43.8	43.3	-43.3	42.4	-0.664	0.654

Table N-282. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	722.	5.59E+03	718.	5.50E+03	-509.	447.
15.	8.29E+03	719.	1.27E+04	1.18E+03	1.23E+04	-474.	266.
30.	3.88E+04	-2.84E+05	9.64E+04	-1.07E+03	9.36E+04	-1.33E+03	1.83E+03
45.	6.23E+04	708.	6.35E+05	947.	1.55E+05	-1.36E+03	2.06E+03
65.	1.38E+04	-8.32E+04	7.43E+05	-8.20E+04	1.50E+05	-1.47E+03	2.10E+03

Table N-283. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.00E+04	1.68E+04	2.32E+04	1.68E+04	2.32E+04	-638.	650.
15.	4.56E+04	1.59E+04	7.54E+04	1.60E+04	7.54E+04	-1.97E+03	1.99E+03
30.	1.25E+05	1.29E+04	2.28E+05	1.35E+04	2.28E+05	-3.73E+03	3.41E+03
45.	1.99E+05	8.15E+03	3.44E+05	1.02E+04	3.40E+05	-4.20E+03	3.14E+03
65.	2.91E+05	-1.26E+03	5.10E+05	6.00E+03	5.03E+05	-4.38E+03	3.26E+03

Table N-284. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	4.39E+04	4.36E+04	4.43E+04	4.36E+04	4.43E+04	-71.3	70.5
15.	4.65E+04	4.33E+04	4.98E+04	4.34E+04	4.98E+04	-211.	215.
30.	5.53E+04	4.24E+04	6.82E+04	4.26E+04	6.82E+04	-422.	430.
45.	6.99E+04	4.10E+04	9.89E+04	4.14E+04	9.90E+04	-633.	645.
65.	9.86E+04	3.81E+04	1.59E+05	3.91E+04	1.59E+05	-915.	932.

Table N–285. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	4.60E+04	4.50E+04	4.69E+04	4.51E+04	4.69E+04	-180.	185.
15.	5.96E+04	5.05E+04	6.88E+04	5.05E+04	6.87E+04	-602.	609.
30.	1.00E+05	6.88E+04	1.22E+05	6.90E+04	1.22E+05	-1.04E+03	720.
45.	1.15E+05	7.41E+04	1.55E+05	7.55E+04	1.52E+05	-876.	815.
65.	1.10E+05	-1.13E+03	2.18E+05	332.	2.08E+05	-1.69E+03	1.51E+03

Table N–286. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>M_y^{\text{ptot}}</math></b>		<b>Filtered <math>(M_y^{\text{ptot}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	4.13E+04	-869.	7.37E+04	1.00E+04	6.65E+04	-6.26E+03	5.04E+03
15.	4.43E+04	1.71E+04	6.91E+04	2.74E+04	6.23E+04	-1.13E+03	1.20E+03
30.	6.90E+04	-2.77E+03	1.38E+05	9.97E+03	1.29E+05	-1.97E+03	1.98E+03
45.	7.36E+04	-1.18E+05	2.24E+05	-9.74E+04	1.97E+05	-3.80E+03	2.74E+03
65.	7.38E+04	-3.47E+05	3.36E+05	-3.27E+05	3.14E+05	-6.17E+03	3.70E+03



Table N-287. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	2.31E+04	-7.61E+04	8.55E+04	-7.12E+04	8.19E+04	-3.14E+03	1.96E+03
45.	6.03E+04	-1.29E+05	1.69E+05	-1.07E+05	1.58E+05	-3.72E+03	2.17E+03
65.	4.10E+04	-2.20E+05	4.36E+05	-1.64E+05	3.82E+05	-3.15E+03	5.25E+03

Table N-288. Minimum and Maximum of  $M_y^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{ptot}}$		Filtered $M_y^{\text{ptot}}$		Filtered $(M_y^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	791.	-750.	2.55E+03	-655.	2.24E+03	-289.	289.
15.	7.15E+03	-6.77E+03	2.32E+04	-5.81E+03	1.99E+04	-864.	847.
30.	3.18E+04	-2.69E+04	9.62E+04	-2.30E+04	8.64E+04	-1.83E+03	1.82E+03
45.	6.59E+04	-1.41E+05	2.38E+05	-1.11E+05	2.13E+05	-3.94E+03	3.27E+03
65.	6.13E+04	-5.61E+05	5.67E+05	-4.32E+05	4.87E+05	-7.58E+03	6.55E+03

# TASK 1/ROLL MOTION/MODEL 5514

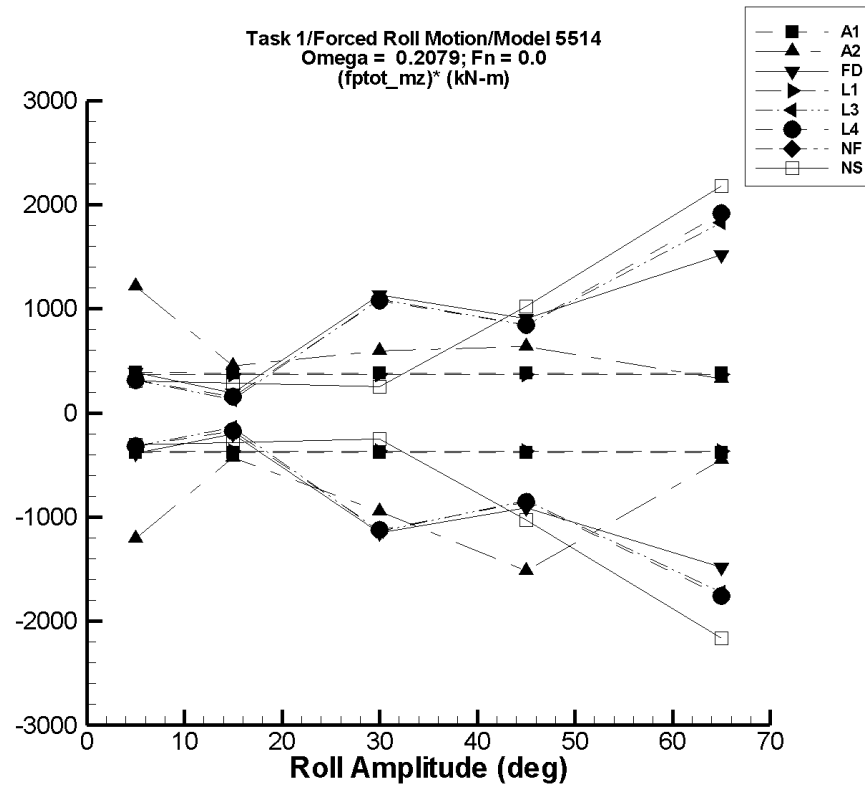


Figure N-37. Minimum and Maximum of  $(M_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N–289. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.97	-2.32E+03	2.34E+03	-1.92E+03	1.93E+03	-383.	387.
15.	-8.90	-6.95E+03	7.03E+03	-5.75E+03	5.79E+03	-383.	386.
30.	-17.8	-1.39E+04	1.41E+04	-1.15E+04	1.16E+04	-383.	386.
45.	-26.7	-2.08E+04	2.11E+04	-1.73E+04	1.74E+04	-383.	386.
65.	-38.5	-3.01E+04	3.05E+04	-2.49E+04	2.51E+04	-383.	386.

Table N–290. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-26.9	-6.20E+03	6.20E+03	-6.07E+03	6.06E+03	-1.21E+03	1.22E+03
15.	-179.	-6.73E+03	6.70E+03	-6.61E+03	6.60E+03	-428.	452.
30.	-625.	-1.17E+05	1.87E+04	-2.90E+04	1.72E+04	-947.	594.
45.	-2.97E+03	-4.29E+05	2.96E+05	-7.11E+04	2.57E+04	-1.51E+03	637.
65.	-2.89E+03	-2.68E+05	1.63E+05	-3.20E+04	1.85E+04	-448.	329.

Table N–291. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.157	-1.95E+03	1.95E+03	-1.95E+03	1.95E+03	-390.	390.
15.	50.7	-2.97E+03	2.97E+03	-2.94E+03	2.94E+03	-199.	193.
30.	348.	-3.43E+04	3.43E+04	-3.43E+04	3.43E+04	-1.15E+03	1.13E+03
45.	143.	-4.11E+04	4.11E+04	-4.08E+04	4.08E+04	-911.	904.
65.	-1.15E+03	-9.79E+04	9.79E+04	-9.74E+04	9.74E+04	-1.48E+03	1.52E+03

Table N–292. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	7.07E-02	-1.85E+03	1.85E+03	-1.85E+03	1.85E+03	-370.	370.
15.	0.213	-5.55E+03	5.56E+03	-5.55E+03	5.56E+03	-370.	370.
30.	0.431	-1.11E+04	1.11E+04	-1.11E+04	1.11E+04	-370.	370.
45.	0.658	-1.67E+04	1.67E+04	-1.66E+04	1.67E+04	-370.	370.
65.	0.959	-2.41E+04	2.41E+04	-2.40E+04	2.41E+04	-370.	370.

Table N–293. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.05	-1.59E+03	1.59E+03	-1.59E+03	1.59E+03	-319.	318.
15.	102.	-2.01E+03	2.02E+03	-2.00E+03	2.01E+03	-140.	127.
30.	661.	-3.35E+04	3.35E+04	-3.35E+04	3.34E+04	-1.14E+03	1.09E+03
45.	-113.	-3.80E+04	3.80E+04	-3.79E+04	3.79E+04	-840.	845.
65.	-3.34E+03	-1.16E+05	1.16E+05	-1.15E+05	1.15E+05	-1.72E+03	1.83E+03

Table N–294. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.57	-1.58E+03	1.59E+03	-1.58E+03	1.58E+03	-317.	316.
15.	93.5	-2.56E+03	2.54E+03	-2.51E+03	2.48E+03	-174.	159.
30.	677.	-3.40E+04	3.33E+04	-3.30E+04	3.30E+04	-1.12E+03	1.08E+03
45.	-251.	-4.18E+04	3.99E+04	-3.86E+04	3.79E+04	-853.	847.
65.	-4.86E+03	-1.31E+05	1.30E+05	-1.19E+05	1.20E+05	-1.76E+03	1.92E+03

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Table N–295. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–296. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-8.21E-03	-1.55E+03	1.55E+03	-1.54E+03	1.54E+03	-307.	307.
15.	-2.68E-03	-4.30E+03	4.30E+03	-4.28E+03	4.28E+03	-285.	285.
30.	0.203	-7.93E+03	7.93E+03	-7.49E+03	7.49E+03	-250.	250.
45.	4.18	-4.65E+04	4.65E+04	-4.62E+04	4.62E+04	-1.03E+03	1.03E+03
65.	708.	-1.40E+05	1.42E+05	-1.40E+05	1.42E+05	-2.17E+03	2.18E+03

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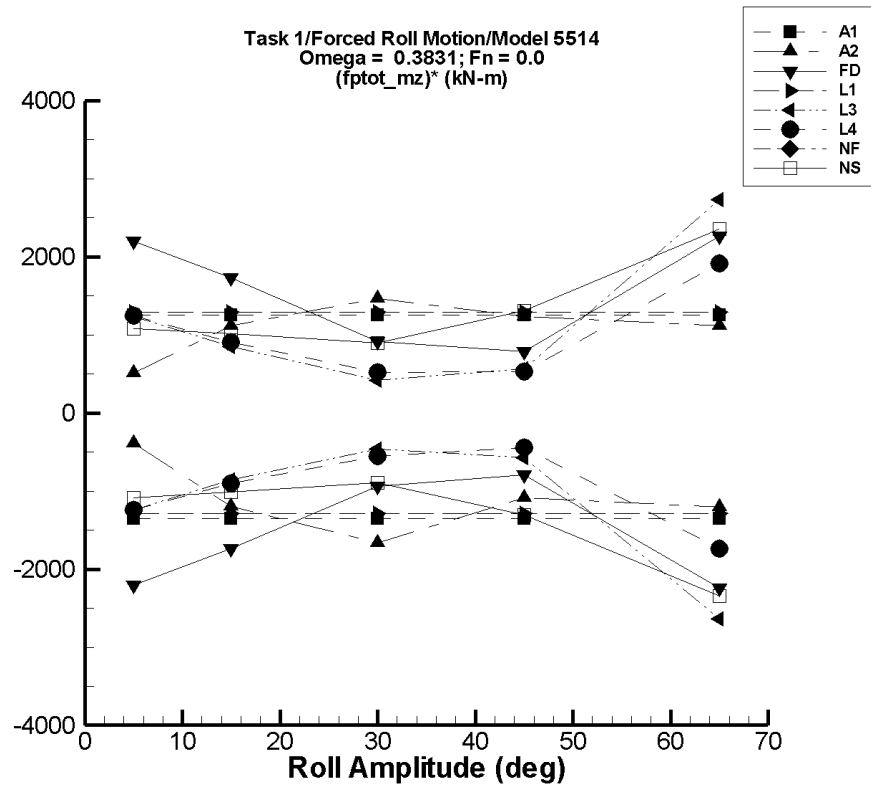


Figure N-38. Minimum and Maximum of  $(M_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N–297. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-14.8	-6.83E+03	6.97E+03	-6.78E+03	6.26E+03	-1.35E+03	1.25E+03
15.	-44.2	-2.05E+04	2.09E+04	-2.03E+04	1.88E+04	-1.35E+03	1.25E+03
30.	-88.5	-4.09E+04	4.18E+04	-4.06E+04	3.75E+04	-1.35E+03	1.25E+03
45.	-133.	-6.14E+04	6.27E+04	-6.10E+04	5.63E+04	-1.35E+03	1.25E+03
65.	-192.	-8.87E+04	9.06E+04	-8.80E+04	8.13E+04	-1.35E+03	1.25E+03

Table N–298. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-37.2	-1.99E+03	4.04E+03	-1.97E+03	2.50E+03	-386.	507.
15.	-200.	-1.84E+04	1.78E+04	-1.81E+04	1.65E+04	-1.20E+03	1.12E+03
30.	-946.	-1.38E+05	4.79E+04	-5.09E+04	4.30E+04	-1.66E+03	1.46E+03
45.	-1.78E+03	-3.95E+05	1.35E+05	-5.07E+04	5.40E+04	-1.09E+03	1.24E+03
65.	-2.44E+03	-8.13E+04	7.61E+04	-8.09E+04	7.01E+04	-1.21E+03	1.12E+03



Table N–299. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	0.880	-1.10E+04	1.10E+04	-1.10E+04	1.10E+04	-2.20E+03	2.20E+03
15.	57.9	-2.61E+04	2.61E+04	-2.61E+04	2.61E+04	-1.74E+03	1.73E+03
30.	378.	-2.83E+04	2.83E+04	-2.78E+04	2.78E+04	-940.	915.
45.	85.2	-3.62E+04	3.62E+04	-3.55E+04	3.55E+04	-792.	788.
65.	-833.	-1.48E+05	1.48E+05	-1.47E+05	1.47E+05	-2.24E+03	2.27E+03

Table N–300. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	2.51E-02	-6.46E+03	6.46E+03	-6.45E+03	6.45E+03	-1.29E+03	1.29E+03
15.	7.35E-02	-1.94E+04	1.94E+04	-1.94E+04	1.94E+04	-1.29E+03	1.29E+03
30.	0.159	-3.88E+04	3.88E+04	-3.87E+04	3.87E+04	-1.29E+03	1.29E+03
45.	0.254	-5.82E+04	5.81E+04	-5.81E+04	5.81E+04	-1.29E+03	1.29E+03
65.	0.389	-8.40E+04	8.40E+04	-8.39E+04	8.39E+04	-1.29E+03	1.29E+03

Table N-301. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	4.38	-6.20E+03	6.20E+03	-6.20E+03	6.19E+03	-1.24E+03	1.24E+03
15.	98.3	-1.28E+04	1.28E+04	-1.28E+04	1.28E+04	-860.	849.
30.	665.	-1.34E+04	1.34E+04	-1.33E+04	1.33E+04	-465.	420.
45.	13.0	-2.59E+04	2.59E+04	-2.56E+04	2.56E+04	-569.	568.
65.	-3.09E+03	-1.75E+05	1.75E+05	-1.75E+05	1.75E+05	-2.64E+03	2.73E+03

Table N-302. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.45	-6.23E+03	6.22E+03	-6.22E+03	6.22E+03	-1.24E+03	1.24E+03
15.	-28.3	-1.38E+04	1.38E+04	-1.36E+04	1.36E+04	-902.	910.
30.	29.1	-1.72E+04	1.64E+04	-1.66E+04	1.56E+04	-553.	518.
45.	-1.82E+03	-2.51E+04	2.39E+04	-2.19E+04	2.19E+04	-447.	527.
65.	-5.32E+03	-1.29E+05	1.31E+05	-1.18E+05	1.19E+05	-1.74E+03	1.91E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-303. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-304. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	7.07E-02	-5.47E+03	5.48E+03	-5.41E+03	5.42E+03	-1.08E+03	1.08E+03
15.	0.206	-1.53E+04	1.53E+04	-1.52E+04	1.52E+04	-1.01E+03	1.01E+03
30.	0.336	-2.81E+04	2.81E+04	-2.69E+04	2.70E+04	-896.	899.
45.	-3.96	-6.20E+04	6.19E+04	-5.86E+04	5.89E+04	-1.30E+03	1.31E+03
65.	679.	-1.59E+05	1.63E+05	-1.51E+05	1.54E+05	-2.34E+03	2.35E+03

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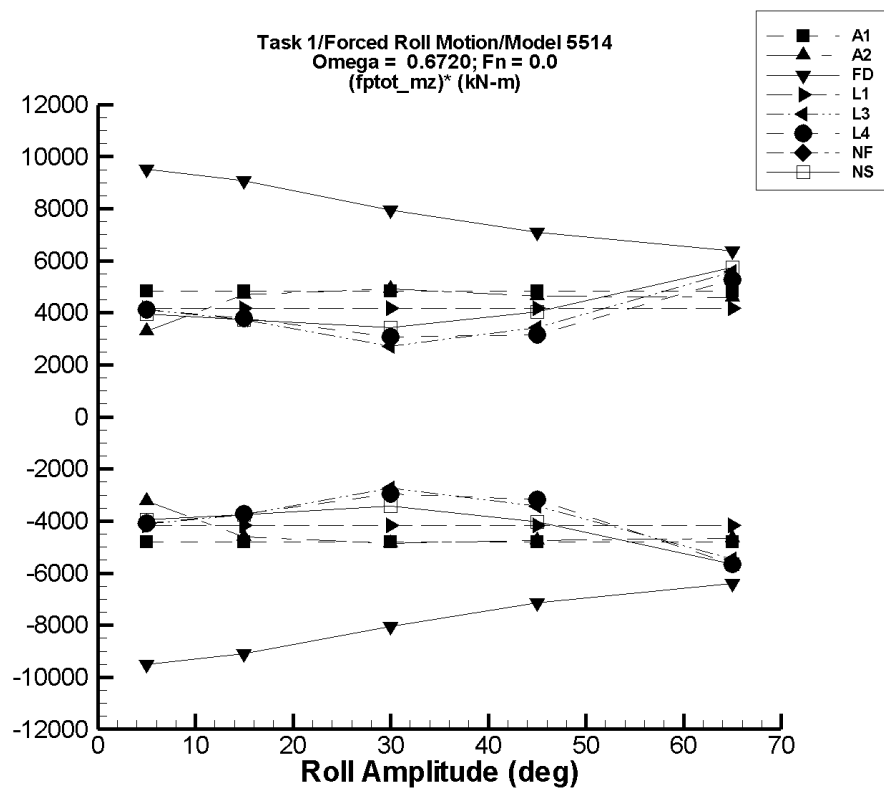


Figure N-39. Minimum and Maximum of  $(M_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-305. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-33.6	-2.43E+04	2.45E+04	-2.40E+04	2.41E+04	-4.79E+03	4.84E+03
15.	-101.	-7.28E+04	7.33E+04	-7.19E+04	7.24E+04	-4.79E+03	4.83E+03
30.	-202.	-1.46E+05	1.47E+05	-1.44E+05	1.45E+05	-4.79E+03	4.83E+03
45.	-302.	-2.18E+05	2.20E+05	-2.16E+05	2.17E+05	-4.79E+03	4.83E+03
65.	-437.	-3.16E+05	3.18E+05	-3.12E+05	3.14E+05	-4.79E+03	4.83E+03

Table N-306. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-76.3	-1.65E+04	1.66E+04	-1.62E+04	1.64E+04	-3.23E+03	3.29E+03
15.	-390.	-7.07E+04	7.13E+04	-6.96E+04	7.01E+04	-4.62E+03	4.70E+03
30.	-1.61E+03	-2.27E+05	1.48E+05	-1.48E+05	1.46E+05	-4.87E+03	4.93E+03
45.	1.80E+03	-2.16E+05	2.14E+05	-2.12E+05	2.11E+05	-4.76E+03	4.64E+03
65.	-1.37E+03	-3.08E+05	3.01E+05	-3.04E+05	2.97E+05	-4.66E+03	4.59E+03

Table N-307. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	2.71	-4.81E+04	4.81E+04	-4.75E+04	4.76E+04	-9.51E+03	9.51E+03
15.	186.	-1.38E+05	1.38E+05	-1.36E+05	1.36E+05	-9.10E+03	9.07E+03
30.	1.26E+03	-2.44E+05	2.44E+05	-2.40E+05	2.40E+05	-8.04E+03	7.96E+03
45.	1.21E+03	-3.28E+05	3.28E+05	-3.20E+05	3.20E+05	-7.14E+03	7.08E+03
65.	99.5	-4.28E+05	4.28E+05	-4.15E+05	4.15E+05	-6.39E+03	6.39E+03

Table N-308. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	0.563	-2.09E+04	2.09E+04	-2.08E+04	2.08E+04	-4.16E+03	4.16E+03
15.	1.72	-6.27E+04	6.27E+04	-6.24E+04	6.25E+04	-4.16E+03	4.16E+03
30.	3.45	-1.25E+05	1.25E+05	-1.25E+05	1.25E+05	-4.16E+03	4.16E+03
45.	5.27	-1.88E+05	1.88E+05	-1.87E+05	1.87E+05	-4.16E+03	4.16E+03
65.	7.71	-2.72E+05	2.72E+05	-2.71E+05	2.71E+05	-4.16E+03	4.16E+03

Table N-309. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	4.48	-2.06E+04	2.07E+04	-2.06E+04	2.06E+04	-4.11E+03	4.11E+03
15.	103.	-5.62E+04	5.62E+04	-5.60E+04	5.60E+04	-3.74E+03	3.73E+03
30.	643.	-8.19E+04	8.20E+04	-8.18E+04	8.19E+04	-2.75E+03	2.71E+03
45.	-233.	-1.55E+05	1.55E+05	-1.54E+05	1.54E+05	-3.41E+03	3.42E+03
65.	-3.26E+03	-3.62E+05	3.62E+05	-3.59E+05	3.59E+05	-5.47E+03	5.57E+03

Table N-310. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-12.8	-2.07E+04	2.08E+04	-2.05E+04	2.06E+04	-4.10E+03	4.13E+03
15.	-317.	-5.68E+04	5.71E+04	-5.62E+04	5.64E+04	-3.73E+03	3.78E+03
30.	-602.	-9.39E+04	9.64E+04	-8.95E+04	9.18E+04	-2.96E+03	3.08E+03
45.	-2.88E+03	-1.56E+05	1.47E+05	-1.45E+05	1.39E+05	-3.16E+03	3.15E+03
65.	644.	-3.85E+05	3.67E+05	-3.68E+05	3.43E+05	-5.66E+03	5.27E+03

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Table N-311. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-312. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.07	-1.99E+04	1.99E+04	-1.97E+04	1.97E+04	-3.94E+03	3.95E+03
15.	-3.19	-5.65E+04	5.66E+04	-5.61E+04	5.62E+04	-3.74E+03	3.75E+03
30.	-4.34	-1.06E+05	1.06E+05	-1.02E+05	1.03E+05	-3.41E+03	3.42E+03
45.	-16.9	-2.03E+05	2.03E+05	-1.82E+05	1.82E+05	-4.04E+03	4.03E+03
65.	569.	-4.43E+05	4.04E+05	-3.67E+05	3.74E+05	-5.65E+03	5.75E+03



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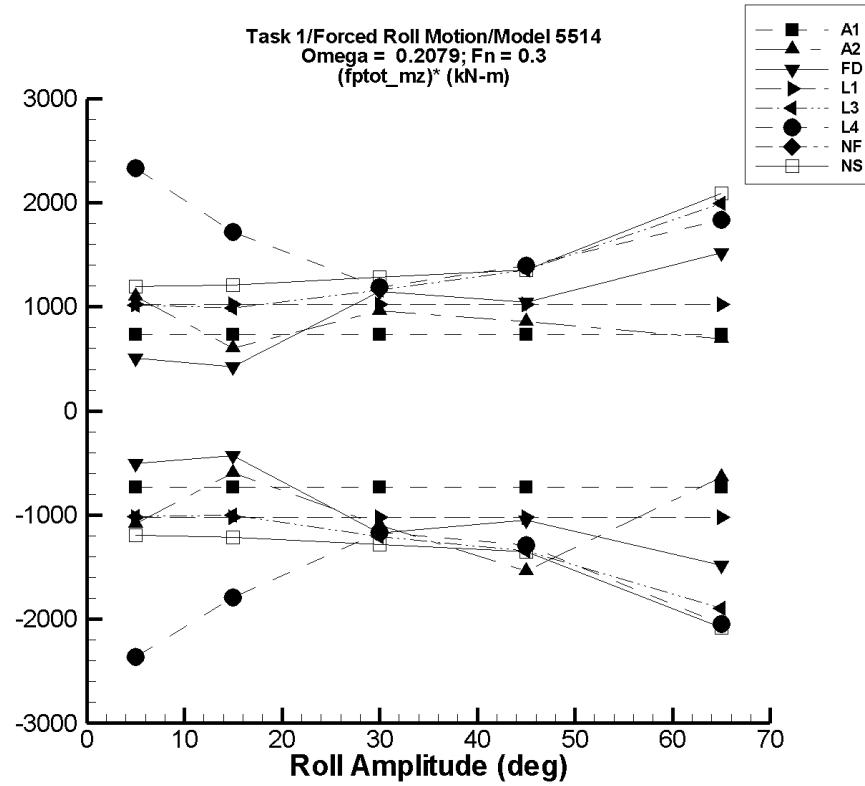


Figure N-40. Minimum and Maximum of  $(M_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-313. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.81	-3.89E+03	3.89E+03	-3.65E+03	3.66E+03	-730.	732.
15.	-5.42	-1.17E+04	1.17E+04	-1.09E+04	1.10E+04	-729.	732.
30.	-10.8	-2.33E+04	2.33E+04	-2.19E+04	2.20E+04	-729.	732.
45.	-16.3	-3.50E+04	3.50E+04	-3.28E+04	3.29E+04	-729.	732.
65.	-23.5	-5.05E+04	5.06E+04	-4.74E+04	4.76E+04	-729.	732.

Table N-314. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-26.5	-6.13E+03	6.12E+03	-5.46E+03	5.48E+03	-1.09E+03	1.10E+03
15.	-175.	-9.39E+03	9.14E+03	-9.07E+03	8.83E+03	-593.	600.
30.	-618.	-1.22E+05	3.06E+04	-3.34E+04	2.81E+04	-1.09E+03	959.
45.	-2.96E+03	-4.30E+05	2.79E+05	-7.21E+04	3.56E+04	-1.54E+03	857.
65.	-2.87E+03	-2.44E+05	1.46E+05	-4.43E+04	4.21E+04	-637.	692.

Table N-315. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.115	-2.53E+03	2.53E+03	-2.52E+03	2.52E+03	-505.	505.
15.	49.7	-6.46E+03	6.46E+03	-6.43E+03	6.43E+03	-432.	425.
30.	340.	-3.49E+04	3.49E+04	-3.48E+04	3.48E+04	-1.17E+03	1.15E+03
45.	116.	-4.74E+04	4.74E+04	-4.71E+04	4.71E+04	-1.05E+03	1.04E+03
65.	-1.23E+03	-9.79E+04	9.80E+04	-9.74E+04	9.74E+04	-1.48E+03	1.52E+03

Table N-316. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.836	-5.13E+03	5.12E+03	-5.12E+03	5.12E+03	-1.02E+03	1.02E+03
15.	-0.919	-1.54E+04	1.54E+04	-1.54E+04	1.54E+04	-1.02E+03	1.02E+03
30.	-0.969	-3.07E+04	3.07E+04	-3.07E+04	3.07E+04	-1.02E+03	1.02E+03
45.	-1.03	-4.61E+04	4.61E+04	-4.61E+04	4.61E+04	-1.02E+03	1.02E+03
65.	-1.06	-6.66E+04	6.66E+04	-6.66E+04	6.66E+04	-1.02E+03	1.02E+03

Table N-317. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	2.50	-5.08E+03	5.08E+03	-5.08E+03	5.08E+03	-1.02E+03	1.01E+03
15.	100.	-1.50E+04	1.50E+04	-1.49E+04	1.49E+04	-1.00E+03	989.
30.	659.	-3.55E+04	3.55E+04	-3.55E+04	3.55E+04	-1.20E+03	1.16E+03
45.	-116.	-6.09E+04	6.09E+04	-6.07E+04	6.07E+04	-1.35E+03	1.35E+03
65.	-3.34E+03	-1.27E+05	1.27E+05	-1.26E+05	1.26E+05	-1.89E+03	2.00E+03

Table N-318. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-135.	-1.59E+04	1.48E+04	-1.20E+04	1.15E+04	-2.37E+03	2.33E+03
15.	-585.	-3.20E+04	3.10E+04	-2.75E+04	2.52E+04	-1.79E+03	1.72E+03
30.	411.	-3.89E+04	4.53E+04	-3.45E+04	3.61E+04	-1.16E+03	1.19E+03
45.	-73.6	-7.01E+04	7.59E+04	-5.82E+04	6.27E+04	-1.29E+03	1.39E+03
65.	-1.24E+03	-1.48E+05	1.46E+05	-1.34E+05	1.18E+05	-2.04E+03	1.83E+03

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Table N-319. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-320. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.75E-02	-6.04E+03	6.04E+03	-5.97E+03	5.97E+03	-1.19E+03	1.19E+03
15.	1.59E-02	-1.85E+04	1.85E+04	-1.82E+04	1.82E+04	-1.21E+03	1.21E+03
30.	0.506	-3.96E+04	3.96E+04	-3.85E+04	3.85E+04	-1.28E+03	1.28E+03
45.	9.19	-6.35E+04	6.35E+04	-6.09E+04	6.09E+04	-1.35E+03	1.35E+03
65.	593.	-1.35E+05	1.38E+05	-1.35E+05	1.36E+05	-2.08E+03	2.09E+03

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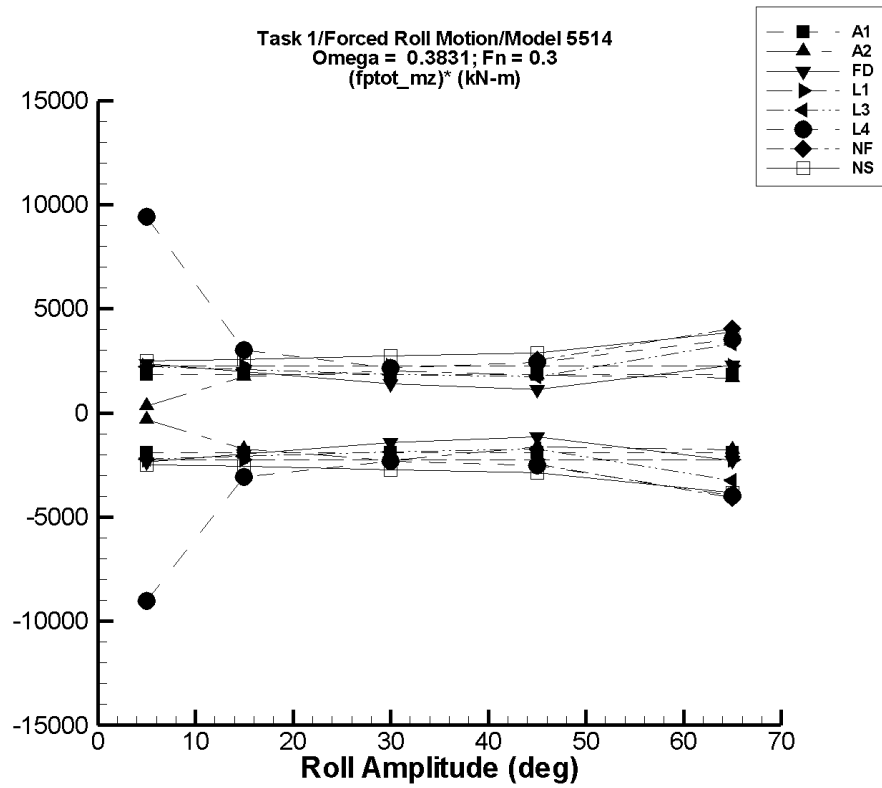


Figure N-41. Minimum and Maximum of  $(M_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-321. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-5.06	-9.56E+03	9.64E+03	-9.50E+03	9.31E+03	-1.90E+03	1.86E+03
15.	-15.2	-2.87E+04	2.89E+04	-2.85E+04	2.79E+04	-1.90E+03	1.86E+03
30.	-30.3	-5.73E+04	5.78E+04	-5.70E+04	5.59E+04	-1.90E+03	1.86E+03
45.	-45.5	-8.60E+04	8.67E+04	-8.54E+04	8.38E+04	-1.90E+03	1.86E+03
65.	-65.7	-1.24E+05	1.25E+05	-1.23E+05	1.21E+05	-1.90E+03	1.86E+03

Table N-322. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-27.5	-1.74E+03	2.47E+03	-1.69E+03	1.55E+03	-333.	316.
15.	-171.	-2.65E+04	2.61E+04	-2.63E+04	2.57E+04	-1.74E+03	1.73E+03
30.	-888.	-1.57E+05	6.21E+04	-6.92E+04	5.99E+04	-2.28E+03	2.03E+03
45.	-1.69E+03	-3.72E+05	1.19E+05	-7.49E+04	7.97E+04	-1.63E+03	1.81E+03
65.	-2.31E+03	-1.17E+05	1.10E+05	-1.16E+05	1.06E+05	-1.75E+03	1.67E+03

Table N–323. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	1.04	-1.18E+04	1.18E+04	-1.18E+04	1.18E+04	-2.35E+03	2.35E+03
15.	62.3	-2.98E+04	2.98E+04	-2.97E+04	2.97E+04	-1.98E+03	1.98E+03
30.	413.	-4.30E+04	4.30E+04	-4.24E+04	4.24E+04	-1.43E+03	1.40E+03
45.	200.	-5.32E+04	5.32E+04	-5.14E+04	5.15E+04	-1.15E+03	1.14E+03
65.	-503.	-1.50E+05	1.50E+05	-1.49E+05	1.49E+05	-2.28E+03	2.30E+03

Table N–324. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-0.669	-1.13E+04	1.13E+04	-1.13E+04	1.13E+04	-2.25E+03	2.25E+03
15.	-0.703	-3.39E+04	3.39E+04	-3.38E+04	3.38E+04	-2.25E+03	2.25E+03
30.	-0.717	-6.77E+04	6.77E+04	-6.76E+04	6.76E+04	-2.25E+03	2.25E+03
45.	-0.803	-1.02E+05	1.02E+05	-1.01E+05	1.01E+05	-2.25E+03	2.25E+03
65.	-0.954	-1.47E+05	1.47E+05	-1.47E+05	1.47E+05	-2.25E+03	2.25E+03



Table N-325. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	2.81	-1.11E+04	1.11E+04	-1.11E+04	1.11E+04	-2.22E+03	2.22E+03
15.	96.7	-3.13E+04	3.13E+04	-3.12E+04	3.12E+04	-2.09E+03	2.07E+03
30.	663.	-5.61E+04	5.61E+04	-5.59E+04	5.59E+04	-1.88E+03	1.84E+03
45.	11.1	-7.84E+04	7.84E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	-3.09E+03	-2.14E+05	2.14E+05	-2.13E+05	2.13E+05	-3.24E+03	3.33E+03

Table N-326. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered $(M_z^{\text{ptot}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-282.	-4.88E+04	5.03E+04	-4.55E+04	4.68E+04	-9.04E+03	9.41E+03
15.	89.8	-5.08E+04	4.81E+04	-4.61E+04	4.53E+04	-3.08E+03	3.01E+03
30.	1.42E+03	-7.27E+04	7.09E+04	-6.77E+04	6.57E+04	-2.30E+03	2.14E+03
45.	576.	-1.23E+05	1.20E+05	-1.12E+05	1.09E+05	-2.51E+03	2.42E+03
65.	596.	-2.89E+05	2.58E+05	-2.58E+05	2.30E+05	-3.98E+03	3.53E+03

Table N-327. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	-867.	-3.46E+04	2.90E+04	-3.27E+04	2.58E+04	-1.06E+03	889.
45.	-2.04E+03	-1.19E+05	1.16E+05	-1.12E+05	1.12E+05	-2.45E+03	2.54E+03
65.	-2.79E+03	-2.81E+05	2.98E+05	-2.68E+05	2.62E+05	-4.08E+03	4.07E+03

Table N-328. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-0.332	-1.26E+04	1.26E+04	-1.25E+04	1.24E+04	-2.49E+03	2.49E+03
15.	-0.807	-3.90E+04	3.89E+04	-3.84E+04	3.83E+04	-2.56E+03	2.55E+03
30.	-1.48	-8.50E+04	8.48E+04	-8.22E+04	8.20E+04	-2.74E+03	2.73E+03
45.	6.52	-1.39E+05	1.39E+05	-1.29E+05	1.29E+05	-2.88E+03	2.87E+03
65.	651.	-2.70E+05	2.69E+05	-2.48E+05	2.52E+05	-3.83E+03	3.87E+03

# TASK 1/ROLL MOTION/MODEL 5514

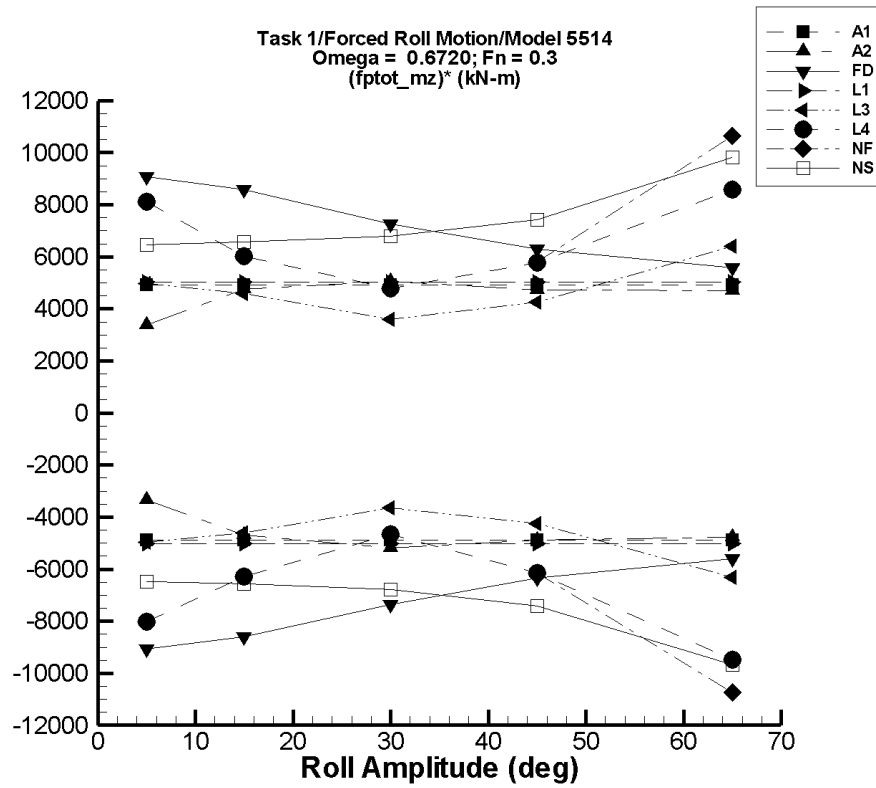


Figure N-42. Minimum and Maximum of  $(M_z^{ptot})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-329. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-20.3	-2.47E+04	2.49E+04	-2.44E+04	2.45E+04	-4.88E+03	4.91E+03
15.	-60.9	-7.42E+04	7.46E+04	-7.32E+04	7.36E+04	-4.88E+03	4.91E+03
30.	-122.	-1.48E+05	1.49E+05	-1.46E+05	1.47E+05	-4.88E+03	4.91E+03
45.	-183.	-2.23E+05	2.24E+05	-2.20E+05	2.21E+05	-4.88E+03	4.91E+03
65.	-264.	-3.21E+05	3.23E+05	-3.17E+05	3.19E+05	-4.88E+03	4.91E+03

Table N-330. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-63.0	-1.70E+04	1.71E+04	-1.67E+04	1.68E+04	-3.34E+03	3.38E+03
15.	-350.	-7.17E+04	7.22E+04	-7.05E+04	7.10E+04	-4.68E+03	4.76E+03
30.	-1.53E+03	-2.41E+05	1.54E+05	-1.57E+05	1.50E+05	-5.20E+03	5.05E+03
45.	1.92E+03	-2.19E+05	2.17E+05	-2.17E+05	2.14E+05	-4.88E+03	4.72E+03
65.	-1.19E+03	-3.15E+05	3.07E+05	-3.12E+05	3.04E+05	-4.78E+03	4.70E+03

Table N-331. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	2.95	-4.59E+04	4.59E+04	-4.54E+04	4.54E+04	-9.08E+03	9.08E+03
15.	192.	-1.30E+05	1.30E+05	-1.29E+05	1.29E+05	-8.60E+03	8.57E+03
30.	1.31E+03	-2.23E+05	2.23E+05	-2.19E+05	2.19E+05	-7.35E+03	7.26E+03
45.	1.37E+03	-2.90E+05	2.90E+05	-2.85E+05	2.85E+05	-6.35E+03	6.30E+03
65.	558.	-3.67E+05	3.67E+05	-3.63E+05	3.63E+05	-5.60E+03	5.58E+03

Table N-332. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-0.638	-2.52E+04	2.52E+04	-2.51E+04	2.51E+04	-5.02E+03	5.02E+03
15.	-0.644	-7.57E+04	7.57E+04	-7.54E+04	7.54E+04	-5.02E+03	5.02E+03
30.	-0.678	-1.51E+05	1.51E+05	-1.51E+05	1.51E+05	-5.02E+03	5.02E+03
45.	-0.774	-2.27E+05	2.27E+05	-2.26E+05	2.26E+05	-5.02E+03	5.02E+03
65.	-1.01	-3.28E+05	3.28E+05	-3.27E+05	3.27E+05	-5.02E+03	5.02E+03

Table N-333. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.38	-2.49E+04	2.49E+04	-2.49E+04	2.49E+04	-4.97E+03	4.97E+03
15.	100.	-6.94E+04	6.94E+04	-6.91E+04	6.91E+04	-4.61E+03	4.60E+03
30.	638.	-1.09E+05	1.09E+05	-1.09E+05	1.09E+05	-3.64E+03	3.60E+03
45.	-240.	-1.93E+05	1.93E+05	-1.92E+05	1.92E+05	-4.26E+03	4.27E+03
65.	-3.27E+03	-4.17E+05	4.17E+05	-4.13E+05	4.13E+05	-6.30E+03	6.41E+03

Table N-334. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{ptot}}$		Filtered $M_z^{\text{ptot}}$		Filtered $(M_z^{\text{ptot}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	13.3	-4.34E+04	4.11E+04	-4.01E+04	4.06E+04	-8.03E+03	8.12E+03
15.	401.	-1.00E+05	9.89E+04	-9.38E+04	9.08E+04	-6.28E+03	6.03E+03
30.	1.39E+03	-1.44E+05	1.51E+05	-1.38E+05	1.45E+05	-4.65E+03	4.78E+03
45.	333.	-2.90E+05	2.90E+05	-2.76E+05	2.60E+05	-6.15E+03	5.77E+03
65.	5.62E+03	-6.51E+05	6.05E+05	-6.10E+05	5.64E+05	-9.47E+03	8.58E+03

Table N-335. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	-5.18E+03	-1.48E+05	1.28E+05	-1.41E+05	1.23E+05	-4.51E+03	4.27E+03
45.	-1.16E+04	-3.20E+05	2.70E+05	-2.88E+05	2.49E+05	-6.14E+03	5.80E+03
65.	-8.27E+03	-8.24E+05	8.06E+05	-7.07E+05	6.84E+05	-1.08E+04	1.07E+04

Table N-336. Minimum and Maximum of  $M_z^{\text{ptot}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{ptot}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{ptot}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{ptot}})^*$ Max. (kN-m/°)
5.	-1.80	-3.29E+04	3.28E+04	-3.24E+04	3.24E+04	-6.47E+03	6.47E+03
15.	-5.50	-1.01E+05	1.01E+05	-9.84E+04	9.84E+04	-6.56E+03	6.56E+03
30.	-10.8	-2.09E+05	2.09E+05	-2.03E+05	2.03E+05	-6.78E+03	6.78E+03
45.	-2.75	-3.53E+05	3.53E+05	-3.34E+05	3.34E+05	-7.42E+03	7.43E+03
65.	483.	-6.81E+05	6.84E+05	-6.28E+05	6.39E+05	-9.67E+03	9.82E+03

# TASK 1/ROLL MOTION/MODEL 5514

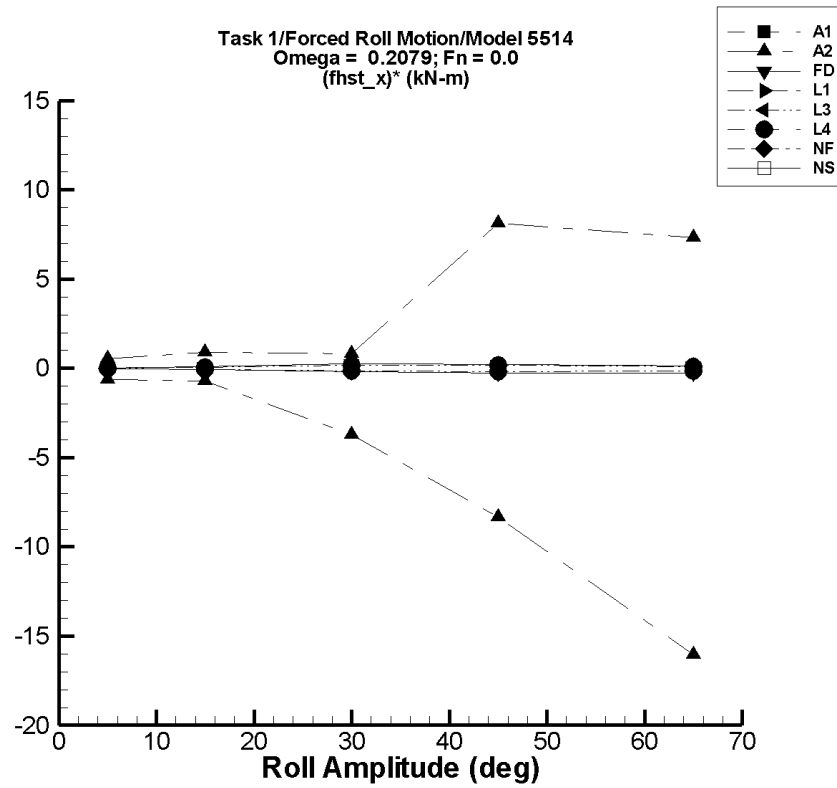


Figure N-43. Minimum and Maximum of  $(F_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.



Table N–337. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–338. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.617	0.528
15.	35.6	24.9	49.4	24.9	48.9	-0.709	0.887
30.	33.7	-748.	69.2	-77.4	58.6	-3.70	0.830
45.	-16.4	-1.20E+03	2.36E+03	-391.	349.	-8.33	8.13
65.	-212.	-1.26E+03	1.76E+03	-1.26E+03	263.	-16.1	7.31

Table N–339. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.55E-02	1.59E-02
15.	-20.3	-21.4	-19.1	-21.4	-19.1	-6.78E-02	8.39E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.00	-0.193	0.252
45.	-9.65	-21.4	0.541	-21.4	0.514	-0.260	0.226
65.	-5.09	-21.4	4.06	-21.3	3.87	-0.250	0.138

Table N–340. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-341. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.80E-02	2.30E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.71E-02	3.62E-02
30.	-11.6	-16.4	-5.86	-16.4	-5.97	-0.160	0.186
45.	-7.52	-16.4	1.04	-16.3	0.532	-0.196	0.179
65.	-7.22	-16.4	1.03	-16.3	8.06E-02	-0.140	0.112

Table N-342. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.80E-02	2.30E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.71E-02	3.62E-02
30.	-11.6	-16.4	-5.86	-16.4	-5.97	-0.160	0.186
45.	-7.52	-16.4	1.04	-16.3	0.532	-0.196	0.179
65.	-7.22	-16.4	1.03	-16.3	8.06E-02	-0.140	0.112

# TASK 1/ROLL MOTION/MODEL 5514

Table N–343. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–344. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

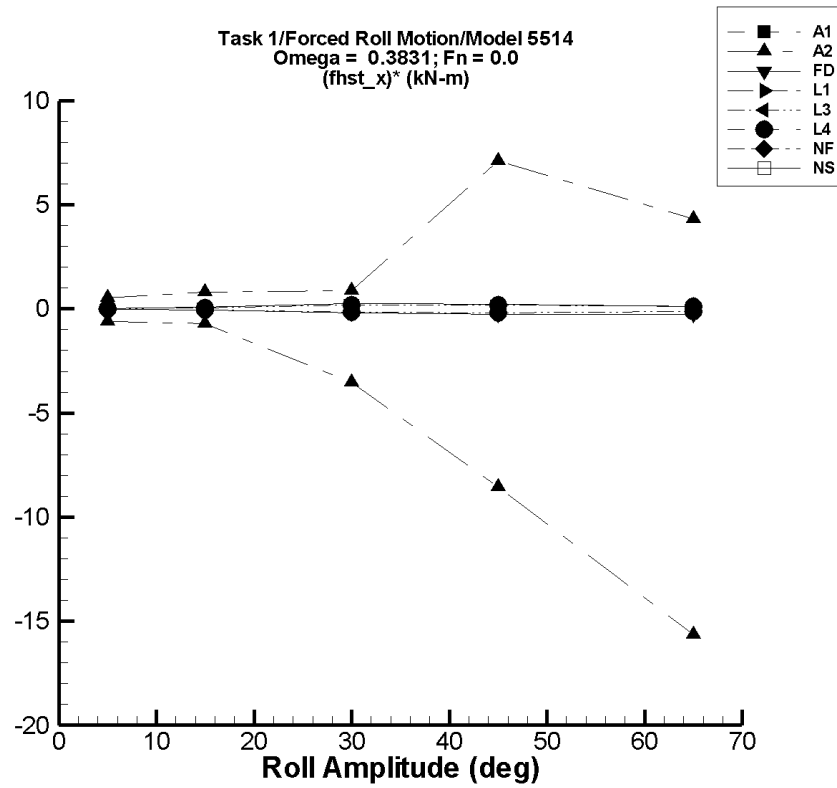


Figure N-44. Minimum and Maximum of  $(F_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-345. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-346. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.619	0.528
15.	35.6	24.9	49.4	25.1	47.9	-0.702	0.822
30.	32.3	-750.	67.2	-73.5	58.2	-3.52	0.863
45.	12.0	-1.20E+03	2.36E+03	-373.	332.	-8.56	7.11
65.	-234.	-1.26E+03	70.2	-1.25E+03	47.9	-15.7	4.33

Table N-347. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.49E-02	1.58E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.51E-02	8.29E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.09	-0.191	0.250
45.	-9.60	-21.4	0.539	-21.3	0.472	-0.260	0.224
65.	-5.02	-21.4	4.05	-21.2	3.38	-0.249	0.129

Table N-348. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–349. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.20E-02	2.11E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.67E-02	3.62E-02
30.	-11.5	-16.4	-5.88	-16.4	-6.04	-0.161	0.184
45.	-7.49	-16.4	1.03	-16.4	0.366	-0.198	0.175
65.	-7.32	-16.4	0.639	-16.4	-0.378	-0.140	0.107

Table N–350. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.20E-02	2.11E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.67E-02	3.62E-02
30.	-11.5	-16.4	-5.88	-16.4	-6.04	-0.161	0.184
45.	-7.49	-16.4	1.03	-16.4	0.366	-0.198	0.175
65.	-7.32	-16.4	0.639	-16.4	-0.378	-0.140	0.107



# TASK 1/ROLL MOTION/MODEL 5514

Table N–351. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–352. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

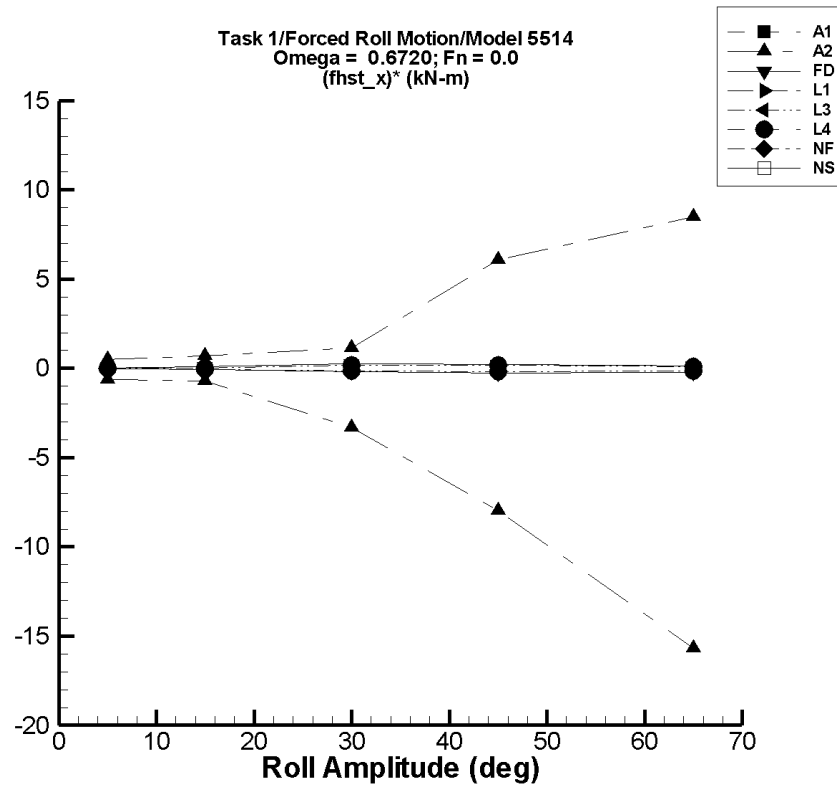


Figure N-45. Minimum and Maximum of  $(F_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

TASK 1/ROLL MOTION/MODEL 5514

Table N–353. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–354. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.8	-0.618	0.506
15.	35.6	24.9	49.4	25.1	46.0	-0.697	0.694
30.	28.5	-749.	66.4	-71.6	62.8	-3.34	1.14
45.	5.47	-383.	1.79E+03	-353.	279.	-7.97	6.07
65.	-203.	-1.26E+03	2.36E+03	-1.22E+03	349.	-15.7	8.50

Table N-355. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.23E-02	1.41E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.56E-02	8.06E-02
30.	-15.5	-21.4	-7.97	-21.3	-8.19	-0.192	0.245
45.	-9.68	-21.4	0.538	-21.2	0.365	-0.257	0.223
65.	-5.22	-21.4	4.06	-20.8	2.74	-0.240	0.123

Table N-356. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–357. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-1.69E-02	1.83E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.63E-02	3.60E-02
30.	-11.5	-16.4	-5.87	-16.4	-6.04	-0.162	0.184
45.	-7.53	-16.4	1.03	-16.3	0.227	-0.195	0.172
65.	-7.33	-16.4	0.639	-16.4	-1.79	-0.139	8.52E-02

Table N–358. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-1.69E-02	1.83E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.63E-02	3.60E-02
30.	-11.5	-16.4	-5.87	-16.4	-6.04	-0.162	0.184
45.	-7.53	-16.4	1.03	-16.3	0.227	-0.195	0.172
65.	-7.33	-16.4	0.639	-16.4	-1.79	-0.139	8.52E-02

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Table N–359. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–360. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

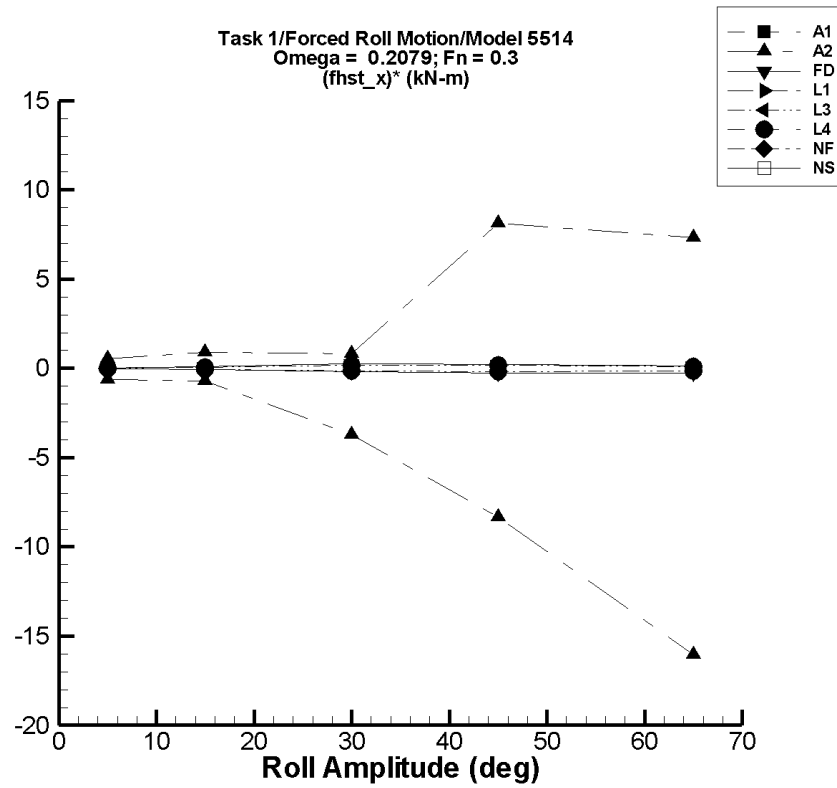


Figure N-46. Minimum and Maximum of  $(F_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-361. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-362. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.617	0.528
15.	35.6	24.9	49.4	24.9	48.9	-0.709	0.887
30.	33.7	-748.	69.2	-77.4	58.6	-3.70	0.830
45.	-16.4	-1.20E+03	2.36E+03	-391.	349.	-8.33	8.13
65.	-212.	-1.26E+03	1.76E+03	-1.26E+03	263.	-16.1	7.31



Table N-363. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.55E-02	1.59E-02
15.	-20.3	-21.4	-19.1	-21.4	-19.1	-6.78E-02	8.39E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.00	-0.193	0.252
45.	-9.65	-21.4	0.541	-21.4	0.514	-0.260	0.226
65.	-5.09	-21.4	4.06	-21.3	3.87	-0.250	0.138

Table N-364. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-365. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.80E-02	2.30E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.71E-02	3.62E-02
30.	-11.6	-16.4	-5.86	-16.4	-5.97	-0.160	0.186
45.	-7.52	-16.4	1.04	-16.3	0.531	-0.196	0.179
65.	-7.22	-16.4	1.03	-16.3	8.07E-02	-0.140	0.112

Table N-366. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.80E-02	2.30E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.71E-02	3.62E-02
30.	-11.6	-16.4	-5.86	-16.4	-5.97	-0.160	0.186
45.	-7.52	-16.4	1.04	-16.3	0.531	-0.196	0.179
65.	-7.22	-16.4	1.03	-16.3	8.07E-02	-0.140	0.112

# TASK 1/ROLL MOTION/MODEL 5514

Table N–367. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–368. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

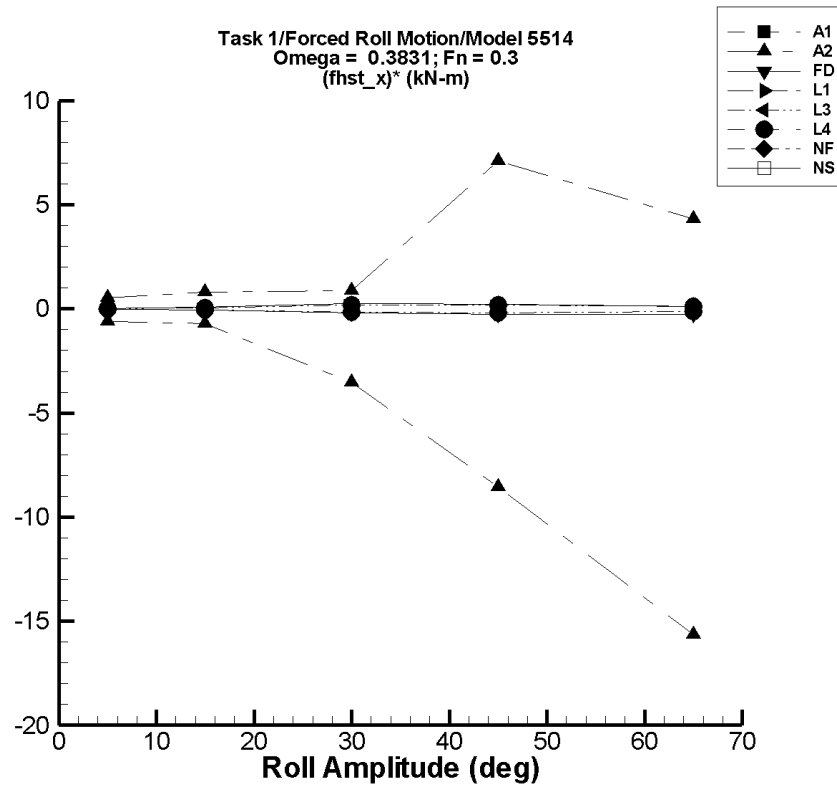


Figure N-47. Minimum and Maximum of  $(F_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-369. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-370. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.9	-0.619	0.528
15.	35.6	24.9	49.4	25.1	47.9	-0.702	0.822
30.	32.3	-750.	67.2	-73.5	58.2	-3.52	0.863
45.	12.0	-1.20E+03	2.36E+03	-373.	332.	-8.56	7.11
65.	-234.	-1.26E+03	70.2	-1.25E+03	47.9	-15.7	4.33

Table N-371. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.49E-02	1.58E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.51E-02	8.29E-02
30.	-15.6	-21.4	-7.97	-21.3	-8.09	-0.191	0.250
45.	-9.60	-21.4	0.538	-21.3	0.472	-0.260	0.224
65.	-5.02	-21.4	4.05	-21.2	3.38	-0.249	0.129

Table N-372. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-373. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.21E-02	2.11E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.67E-02	3.62E-02
30.	-11.5	-16.4	-5.88	-16.4	-6.04	-0.161	0.184
45.	-7.49	-16.4	1.03	-16.4	0.366	-0.198	0.175
65.	-7.32	-16.4	0.639	-16.4	-0.378	-0.140	0.107

Table N-374. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-2.21E-02	2.11E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.67E-02	3.62E-02
30.	-11.5	-16.4	-5.88	-16.4	-6.04	-0.161	0.184
45.	-7.49	-16.4	1.03	-16.4	0.366	-0.198	0.175
65.	-7.32	-16.4	0.639	-16.4	-0.378	-0.140	0.107

# TASK 1/ROLL MOTION/MODEL 5514

Table N–375. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–376. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—



# TASK 1/ROLL MOTION/MODEL 5514

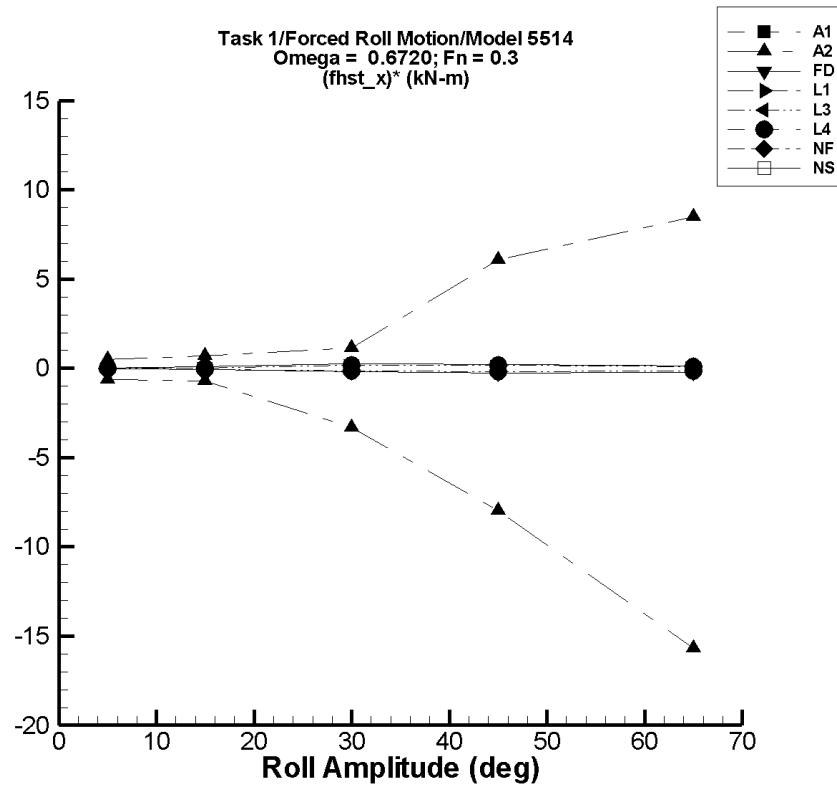


Figure N-48. Minimum and Maximum of  $(F_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

# TASK 1/ROLL MOTION/MODEL 5514

Table N-377. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-378. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	43.3	40.2	45.9	40.2	45.8	-0.618	0.506
15.	35.6	24.9	49.4	25.1	46.0	-0.697	0.694
30.	28.5	-749.	66.4	-71.6	62.8	-3.34	1.14
45.	5.47	-383.	1.79E+03	-353.	279.	-7.97	6.07
65.	-203.	-1.26E+03	2.36E+03	-1.22E+03	349.	-15.7	8.50

Table N-379. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-21.3	-21.4	-21.2	-21.4	-21.2	-1.23E-02	1.42E-02
15.	-20.3	-21.4	-19.1	-21.3	-19.1	-6.56E-02	8.06E-02
30.	-15.5	-21.4	-7.97	-21.3	-8.18	-0.192	0.245
45.	-9.68	-21.4	0.537	-21.2	0.365	-0.257	0.223
65.	-5.22	-21.4	4.06	-20.8	2.74	-0.240	0.123

Table N-380. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–381. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-1.70E-02	1.83E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.63E-02	3.60E-02
30.	-11.5	-16.4	-5.87	-16.4	-6.04	-0.162	0.184
45.	-7.53	-16.4	1.03	-16.3	0.228	-0.195	0.172
65.	-7.33	-16.4	0.639	-16.4	-1.79	-0.139	8.52E-02

Table N–382. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-16.3	-16.4	-16.1	-16.4	-16.2	-1.70E-02	1.83E-02
15.	-15.5	-16.4	-15.0	-16.4	-15.0	-5.63E-02	3.60E-02
30.	-11.5	-16.4	-5.87	-16.4	-6.04	-0.162	0.184
45.	-7.53	-16.4	1.03	-16.3	0.228	-0.195	0.172
65.	-7.33	-16.4	0.639	-16.4	-1.79	-0.139	8.52E-02

# TASK 1/ROLL MOTION/MODEL 5514

Table N–383. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–384. Minimum and Maximum of  $F_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{hst}}$		Filtered $F_x^{\text{hst}}$		Filtered $(F_x^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

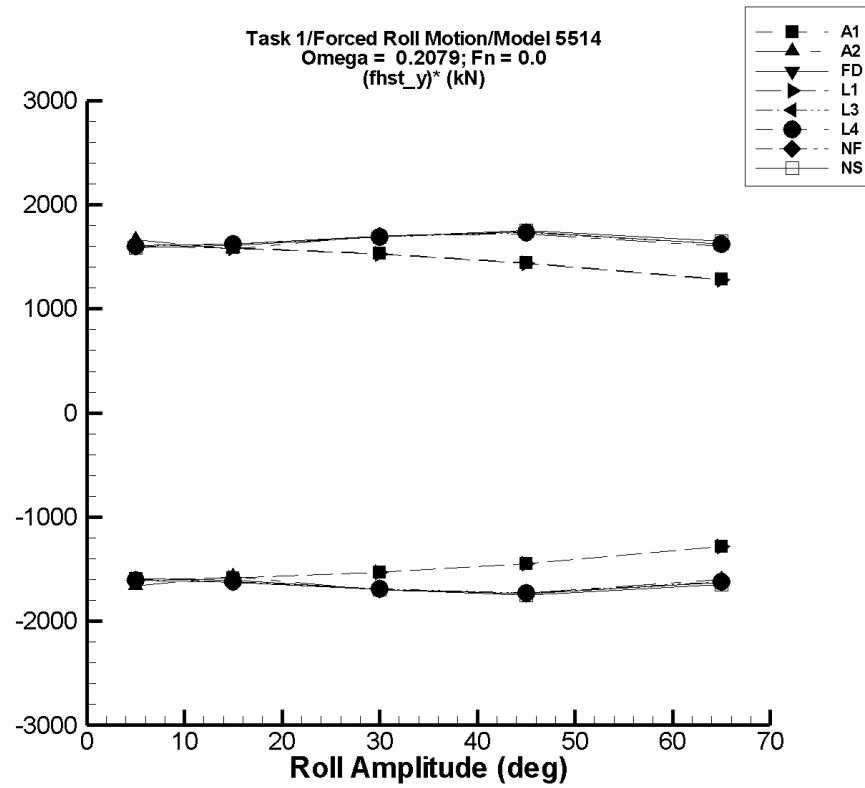


Figure N-49. Minimum and Maximum of  $(F_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-385. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	5.89E-02	-8.02E+03	8.02E+03	-8.01E+03	8.02E+03	-1.60E+03	1.60E+03
15.	1.72	-2.38E+04	2.38E+04	-2.38E+04	2.38E+04	-1.59E+03	1.59E+03
30.	13.7	-4.60E+04	4.60E+04	-4.59E+04	4.60E+04	-1.53E+03	1.53E+03
45.	45.6	-6.50E+04	6.50E+04	-6.50E+04	6.51E+04	-1.44E+03	1.44E+03
65.	133.	-8.34E+04	8.34E+04	-8.33E+04	8.35E+04	-1.28E+03	1.28E+03

Table N-386. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.27	-8.30E+03	8.30E+03	-8.29E+03	8.30E+03	-1.66E+03	1.66E+03
15.	10.3	-2.36E+04	2.36E+04	-2.36E+04	2.36E+04	-1.57E+03	1.57E+03
30.	-1.08	-5.12E+04	5.12E+04	-5.11E+04	5.12E+04	-1.70E+03	1.71E+03
45.	0.539	-7.74E+04	7.77E+04	-7.80E+04	7.74E+04	-1.73E+03	1.72E+03
65.	-92.7	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.60E+03	1.60E+03

Table N-387. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.47E-03	-8.04E+03	8.04E+03	-8.03E+03	8.03E+03	-1.61E+03	1.61E+03
15.	-2.11	-2.44E+04	2.44E+04	-2.44E+04	2.44E+04	-1.62E+03	1.62E+03
30.	-21.0	-5.09E+04	5.09E+04	-5.09E+04	5.09E+04	-1.70E+03	1.70E+03
45.	-41.8	-7.82E+04	7.82E+04	-7.81E+04	7.81E+04	-1.73E+03	1.74E+03
65.	20.1	-1.06E+05	1.06E+05	-1.06E+05	1.06E+05	-1.63E+03	1.62E+03

Table N-388. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.145	-8.00E+03	8.00E+03	-8.00E+03	8.00E+03	-1.60E+03	1.60E+03
15.	4.15	-2.38E+04	2.38E+04	-2.38E+04	2.38E+04	-1.58E+03	1.58E+03
30.	32.8	-4.59E+04	4.59E+04	-4.59E+04	4.59E+04	-1.53E+03	1.53E+03
45.	108.	-6.49E+04	6.49E+04	-6.49E+04	6.49E+04	-1.44E+03	1.44E+03
65.	314.	-8.32E+04	8.32E+04	-8.32E+04	8.32E+04	-1.28E+03	1.27E+03



Table N-389. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.147	-8.02E+03	8.02E+03	-8.02E+03	8.02E+03	-1.60E+03	1.60E+03
15.	-4.34	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-42.3	-5.07E+04	5.07E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-80.8	-7.79E+04	7.79E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	81.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-390. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.147	-8.02E+03	8.02E+03	-8.02E+03	8.02E+03	-1.60E+03	1.60E+03
15.	-4.34	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-42.3	-5.07E+04	5.07E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-80.8	-7.79E+04	7.79E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	81.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

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Table N–391. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–392. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-8.15E-05	-8.03E+03	8.03E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	2.64E-04	-2.43E+04	2.43E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	-1.31E-03	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.69E+03	1.69E+03
45.	9.39E-02	-7.90E+04	7.90E+04	-7.89E+04	7.89E+04	-1.75E+03	1.75E+03
65.	92.8	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.64E+03	1.65E+03

# TASK 1/ROLL MOTION/MODEL 5514

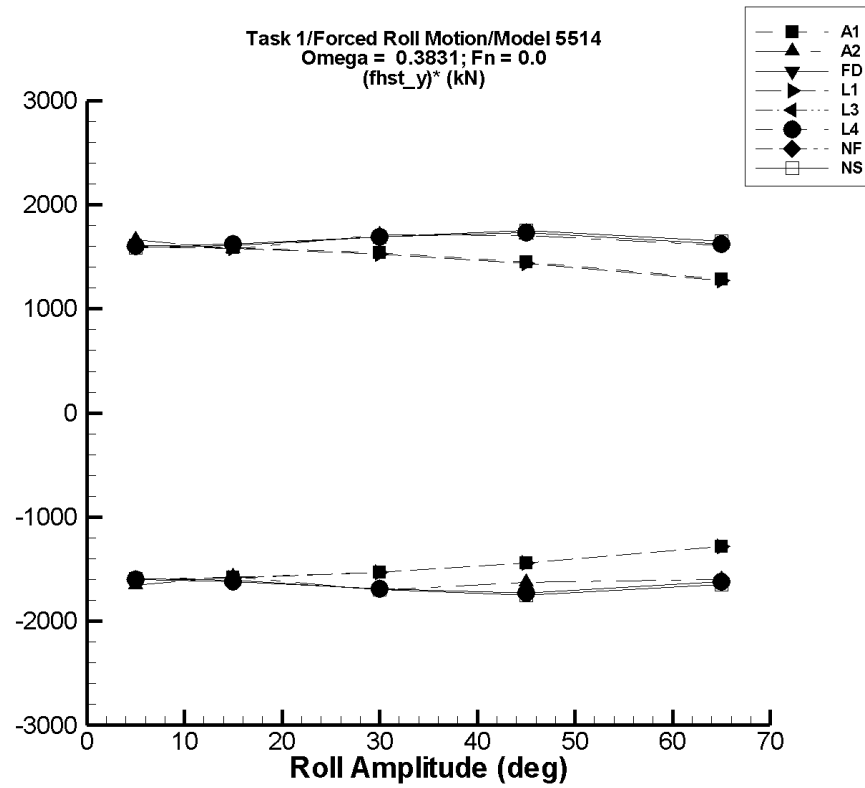


Figure N-50. Minimum and Maximum of  $(F_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-393. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	5.39E-02	-8.02E+03	8.02E+03	-7.99E+03	8.04E+03	-1.60E+03	1.61E+03
15.	1.43	-2.38E+04	2.38E+04	-2.37E+04	2.39E+04	-1.58E+03	1.59E+03
30.	11.4	-4.60E+04	4.60E+04	-4.58E+04	4.61E+04	-1.53E+03	1.54E+03
45.	37.7	-6.50E+04	6.50E+04	-6.48E+04	6.52E+04	-1.44E+03	1.45E+03
65.	110.	-8.34E+04	8.34E+04	-8.32E+04	8.37E+04	-1.28E+03	1.29E+03

Table N-394. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.20	-8.30E+03	8.30E+03	-8.27E+03	8.33E+03	-1.65E+03	1.66E+03
15.	9.79	-2.36E+04	2.36E+04	-2.35E+04	2.37E+04	-1.57E+03	1.58E+03
30.	17.6	-5.12E+04	5.12E+04	-5.10E+04	5.13E+04	-1.70E+03	1.71E+03
45.	1.01E+03	-7.74E+04	7.74E+04	-7.23E+04	7.76E+04	-1.63E+03	1.70E+03
65.	-20.6	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.60E+03	1.61E+03

Table N-395. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.27E-02	-8.04E+03	8.04E+03	-8.01E+03	8.01E+03	-1.60E+03	1.60E+03
15.	-2.16	-2.44E+04	2.44E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-21.4	-5.09E+04	5.09E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-32.3	-7.82E+04	7.82E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	49.0	-1.06E+05	1.06E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-396. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.197	-8.00E+03	8.00E+03	-7.99E+03	7.99E+03	-1.60E+03	1.60E+03
15.	4.25	-2.38E+04	2.38E+04	-2.37E+04	2.37E+04	-1.58E+03	1.58E+03
30.	32.3	-4.59E+04	4.59E+04	-4.58E+04	4.58E+04	-1.53E+03	1.53E+03
45.	106.	-6.49E+04	6.49E+04	-6.48E+04	6.48E+04	-1.44E+03	1.44E+03
65.	306.	-8.32E+04	8.32E+04	-8.31E+04	8.31E+04	-1.28E+03	1.27E+03

Table N-397. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.17E-02	-8.02E+03	8.02E+03	-8.01E+03	8.01E+03	-1.60E+03	1.60E+03
15.	-3.95	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-40.5	-5.07E+04	5.07E+04	-5.07E+04	5.06E+04	-1.69E+03	1.69E+03
45.	-85.1	-7.79E+04	7.79E+04	-7.78E+04	7.78E+04	-1.73E+03	1.73E+03
65.	62.3	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-398. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.17E-02	-8.02E+03	8.02E+03	-8.01E+03	8.01E+03	-1.60E+03	1.60E+03
15.	-3.95	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-40.5	-5.07E+04	5.07E+04	-5.07E+04	5.06E+04	-1.69E+03	1.69E+03
45.	-85.1	-7.79E+04	7.79E+04	-7.78E+04	7.78E+04	-1.73E+03	1.73E+03
65.	62.3	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

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Table N-399. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-400. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.60E-04	-8.03E+03	8.03E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	3.54E-04	-2.43E+04	2.43E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	-2.03E-04	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.69E+03	1.69E+03
45.	-0.127	-7.90E+04	7.90E+04	-7.89E+04	7.89E+04	-1.75E+03	1.75E+03
65.	72.2	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.65E+03	1.65E+03

# TASK 1/ROLL MOTION/MODEL 5514

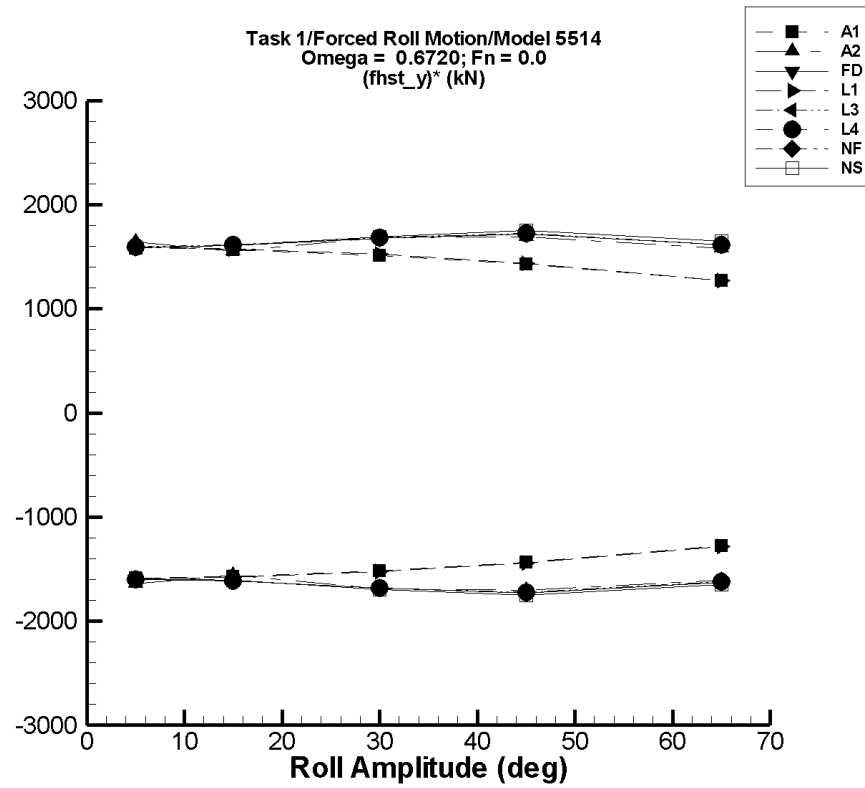


Figure N-51. Minimum and Maximum of  $(F_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.



Table N-401. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.120	-8.02E+03	8.01E+03	-7.93E+03	7.92E+03	-1.59E+03	1.58E+03
15.	3.42	-2.38E+04	2.38E+04	-2.35E+04	2.35E+04	-1.57E+03	1.57E+03
30.	27.1	-4.60E+04	4.60E+04	-4.55E+04	4.55E+04	-1.52E+03	1.52E+03
45.	89.7	-6.50E+04	6.50E+04	-6.44E+04	6.44E+04	-1.43E+03	1.43E+03
65.	259.	-8.33E+04	8.33E+04	-8.28E+04	8.28E+04	-1.28E+03	1.27E+03

Table N-402. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.21	-8.30E+03	8.30E+03	-8.21E+03	8.21E+03	-1.64E+03	1.64E+03
15.	15.1	-2.36E+04	2.36E+04	-2.33E+04	2.33E+04	-1.56E+03	1.55E+03
30.	16.5	-5.12E+04	5.12E+04	-5.06E+04	5.06E+04	-1.69E+03	1.69E+03
45.	454.	-7.73E+04	7.74E+04	-7.62E+04	7.65E+04	-1.70E+03	1.69E+03
65.	703.	-1.04E+05	1.04E+05	-1.04E+05	1.03E+05	-1.61E+03	1.58E+03

Table N-403. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.03E-02	-8.04E+03	8.04E+03	-8.00E+03	7.95E+03	-1.60E+03	1.59E+03
15.	-5.58	-2.44E+04	2.44E+04	-2.42E+04	2.41E+04	-1.62E+03	1.61E+03
30.	-54.8	-5.09E+04	5.09E+04	-5.06E+04	5.03E+04	-1.68E+03	1.68E+03
45.	-87.4	-7.82E+04	7.82E+04	-7.78E+04	7.73E+04	-1.73E+03	1.72E+03
65.	127.	-1.06E+05	1.06E+05	-1.06E+05	1.05E+05	-1.63E+03	1.61E+03

Table N-404. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.302	-8.00E+03	8.00E+03	-7.97E+03	7.97E+03	-1.59E+03	1.59E+03
15.	4.61	-2.38E+04	2.38E+04	-2.37E+04	2.37E+04	-1.58E+03	1.58E+03
30.	33.7	-4.59E+04	4.59E+04	-4.57E+04	4.57E+04	-1.53E+03	1.52E+03
45.	110.	-6.49E+04	6.49E+04	-6.47E+04	6.47E+04	-1.44E+03	1.44E+03
65.	315.	-8.32E+04	8.32E+04	-8.30E+04	8.30E+04	-1.28E+03	1.27E+03

Table N-405. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.20E-02	-8.02E+03	8.02E+03	-7.99E+03	7.99E+03	-1.60E+03	1.60E+03
15.	-3.88	-2.43E+04	2.43E+04	-2.42E+04	2.42E+04	-1.61E+03	1.61E+03
30.	-41.4	-5.07E+04	5.07E+04	-5.05E+04	5.05E+04	-1.68E+03	1.68E+03
45.	-72.3	-7.79E+04	7.79E+04	-7.76E+04	7.76E+04	-1.72E+03	1.73E+03
65.	97.6	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-406. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.20E-02	-8.02E+03	8.02E+03	-7.99E+03	7.99E+03	-1.60E+03	1.60E+03
15.	-3.88	-2.43E+04	2.43E+04	-2.42E+04	2.42E+04	-1.61E+03	1.61E+03
30.	-41.4	-5.07E+04	5.07E+04	-5.05E+04	5.05E+04	-1.68E+03	1.68E+03
45.	-72.3	-7.79E+04	7.79E+04	-7.76E+04	7.76E+04	-1.72E+03	1.73E+03
65.	97.6	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

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Table N-407. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-408. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.13E-04	-8.03E+03	8.03E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	-1.20E-03	-2.43E+04	2.43E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	8.55E-03	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.69E+03	1.69E+03
45.	4.08E-02	-7.90E+04	7.90E+04	-7.89E+04	7.89E+04	-1.75E+03	1.75E+03
65.	70.5	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.65E+03	1.65E+03

# TASK 1/ROLL MOTION/MODEL 5514

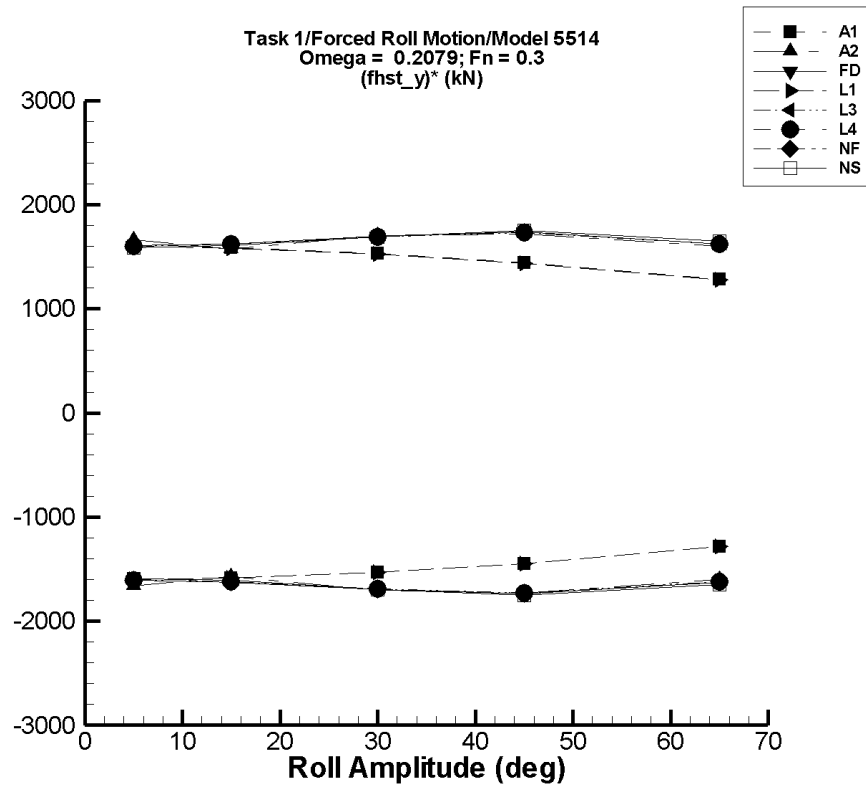


Figure N-52. Minimum and Maximum of  $(F_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-409. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	5.89E-02	-8.02E+03	8.02E+03	-8.01E+03	8.02E+03	-1.60E+03	1.60E+03
15.	1.72	-2.38E+04	2.38E+04	-2.38E+04	2.38E+04	-1.59E+03	1.59E+03
30.	13.7	-4.60E+04	4.60E+04	-4.59E+04	4.60E+04	-1.53E+03	1.53E+03
45.	45.6	-6.50E+04	6.50E+04	-6.50E+04	6.51E+04	-1.44E+03	1.44E+03
65.	133.	-8.34E+04	8.34E+04	-8.33E+04	8.35E+04	-1.28E+03	1.28E+03

Table N-410. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.31	-8.30E+03	8.30E+03	-8.29E+03	8.30E+03	-1.66E+03	1.66E+03
15.	10.3	-2.36E+04	2.36E+04	-2.36E+04	2.36E+04	-1.57E+03	1.57E+03
30.	-1.08	-5.12E+04	5.12E+04	-5.11E+04	5.12E+04	-1.70E+03	1.71E+03
45.	0.539	-7.74E+04	7.77E+04	-7.80E+04	7.74E+04	-1.73E+03	1.72E+03
65.	-92.7	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.60E+03	1.60E+03

Table N-411. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.41E-03	-8.04E+03	8.04E+03	-8.03E+03	8.03E+03	-1.61E+03	1.61E+03
15.	-2.11	-2.44E+04	2.44E+04	-2.44E+04	2.44E+04	-1.62E+03	1.62E+03
30.	-21.0	-5.09E+04	5.09E+04	-5.09E+04	5.09E+04	-1.70E+03	1.70E+03
45.	-41.8	-7.82E+04	7.82E+04	-7.81E+04	7.81E+04	-1.73E+03	1.74E+03
65.	20.1	-1.06E+05	1.06E+05	-1.06E+05	1.06E+05	-1.63E+03	1.62E+03

Table N-412. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.145	-8.00E+03	8.00E+03	-8.00E+03	8.00E+03	-1.60E+03	1.60E+03
15.	4.15	-2.38E+04	2.38E+04	-2.38E+04	2.38E+04	-1.58E+03	1.58E+03
30.	32.8	-4.59E+04	4.59E+04	-4.59E+04	4.59E+04	-1.53E+03	1.53E+03
45.	108.	-6.49E+04	6.49E+04	-6.49E+04	6.49E+04	-1.44E+03	1.44E+03
65.	314.	-8.32E+04	8.32E+04	-8.32E+04	8.32E+04	-1.28E+03	1.27E+03

Table N-413. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.145	-8.02E+03	8.02E+03	-8.02E+03	8.02E+03	-1.60E+03	1.60E+03
15.	-4.33	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-42.3	-5.07E+04	5.07E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-80.9	-7.79E+04	7.79E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	81.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-414. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.145	-8.02E+03	8.02E+03	-8.02E+03	8.02E+03	-1.60E+03	1.60E+03
15.	-4.33	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-42.3	-5.07E+04	5.07E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-80.9	-7.79E+04	7.79E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	81.7	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03



# TASK 1/ROLL MOTION/MODEL 5514

Table N-415. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-416. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-8.15E-05	-8.03E+03	8.03E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	2.64E-04	-2.43E+04	2.43E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	-1.31E-03	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.69E+03	1.69E+03
45.	9.39E-02	-7.90E+04	7.90E+04	-7.89E+04	7.89E+04	-1.75E+03	1.75E+03
65.	71.5	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.65E+03	1.65E+03

# TASK 1/ROLL MOTION/MODEL 5514

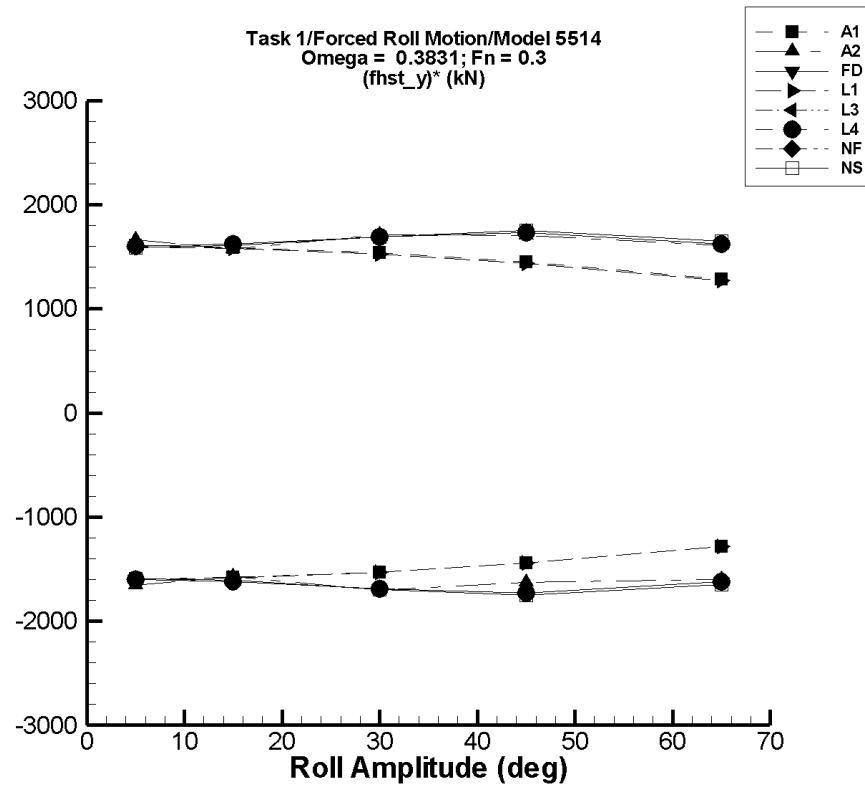


Figure N-53. Minimum and Maximum of  $(F_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-417. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>(F_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	5.39E-02	-8.02E+03	8.02E+03	-7.99E+03	8.04E+03	-1.60E+03	1.61E+03
15.	1.43	-2.38E+04	2.38E+04	-2.37E+04	2.39E+04	-1.58E+03	1.59E+03
30.	11.4	-4.60E+04	4.60E+04	-4.58E+04	4.61E+04	-1.53E+03	1.54E+03
45.	37.7	-6.50E+04	6.50E+04	-6.48E+04	6.52E+04	-1.44E+03	1.45E+03
65.	110.	-8.34E+04	8.34E+04	-8.32E+04	8.37E+04	-1.28E+03	1.29E+03

Table N-418. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>(F_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	1.20	-8.30E+03	8.30E+03	-8.27E+03	8.33E+03	-1.65E+03	1.66E+03
15.	9.79	-2.36E+04	2.36E+04	-2.35E+04	2.37E+04	-1.57E+03	1.58E+03
30.	17.6	-5.12E+04	5.12E+04	-5.10E+04	5.13E+04	-1.70E+03	1.71E+03
45.	1.01E+03	-7.74E+04	7.74E+04	-7.23E+04	7.76E+04	-1.63E+03	1.70E+03
65.	-20.6	-1.04E+05	1.04E+05	-1.04E+05	1.04E+05	-1.60E+03	1.61E+03

Table N-419. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>(F_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	-2.27E-02	-8.04E+03	8.04E+03	-8.01E+03	8.01E+03	-1.60E+03	1.60E+03
15.	-2.15	-2.44E+04	2.44E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-21.4	-5.09E+04	5.09E+04	-5.07E+04	5.07E+04	-1.69E+03	1.69E+03
45.	-32.3	-7.82E+04	7.82E+04	-7.79E+04	7.79E+04	-1.73E+03	1.73E+03
65.	49.0	-1.06E+05	1.06E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-420. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>F_y^{\text{hst}}</math></b>		<b>Filtered <math>(F_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	0.197	-8.00E+03	8.00E+03	-7.99E+03	7.99E+03	-1.60E+03	1.60E+03
15.	4.25	-2.38E+04	2.38E+04	-2.37E+04	2.37E+04	-1.58E+03	1.58E+03
30.	32.3	-4.59E+04	4.59E+04	-4.58E+04	4.58E+04	-1.53E+03	1.53E+03
45.	106.	-6.49E+04	6.49E+04	-6.48E+04	6.48E+04	-1.44E+03	1.44E+03
65.	306.	-8.32E+04	8.32E+04	-8.31E+04	8.31E+04	-1.28E+03	1.27E+03

Table N-421. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.23E-02	-8.02E+03	8.02E+03	-8.01E+03	8.01E+03	-1.60E+03	1.60E+03
15.	-3.95	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-40.5	-5.07E+04	5.07E+04	-5.07E+04	5.06E+04	-1.69E+03	1.69E+03
45.	-85.1	-7.79E+04	7.79E+04	-7.78E+04	7.78E+04	-1.73E+03	1.73E+03
65.	62.2	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-422. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.23E-02	-8.02E+03	8.02E+03	-8.01E+03	8.01E+03	-1.60E+03	1.60E+03
15.	-3.95	-2.43E+04	2.43E+04	-2.43E+04	2.43E+04	-1.62E+03	1.62E+03
30.	-40.5	-5.07E+04	5.07E+04	-5.07E+04	5.06E+04	-1.69E+03	1.69E+03
45.	-85.1	-7.79E+04	7.79E+04	-7.78E+04	7.78E+04	-1.73E+03	1.73E+03
65.	62.2	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

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Table N-423. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-424. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.60E-04	-8.03E+03	8.03E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	3.54E-04	-2.43E+04	2.43E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	-2.03E-04	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.69E+03	1.69E+03
45.	-0.127	-7.90E+04	7.90E+04	-7.89E+04	7.89E+04	-1.75E+03	1.75E+03
65.	72.2	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.65E+03	1.65E+03

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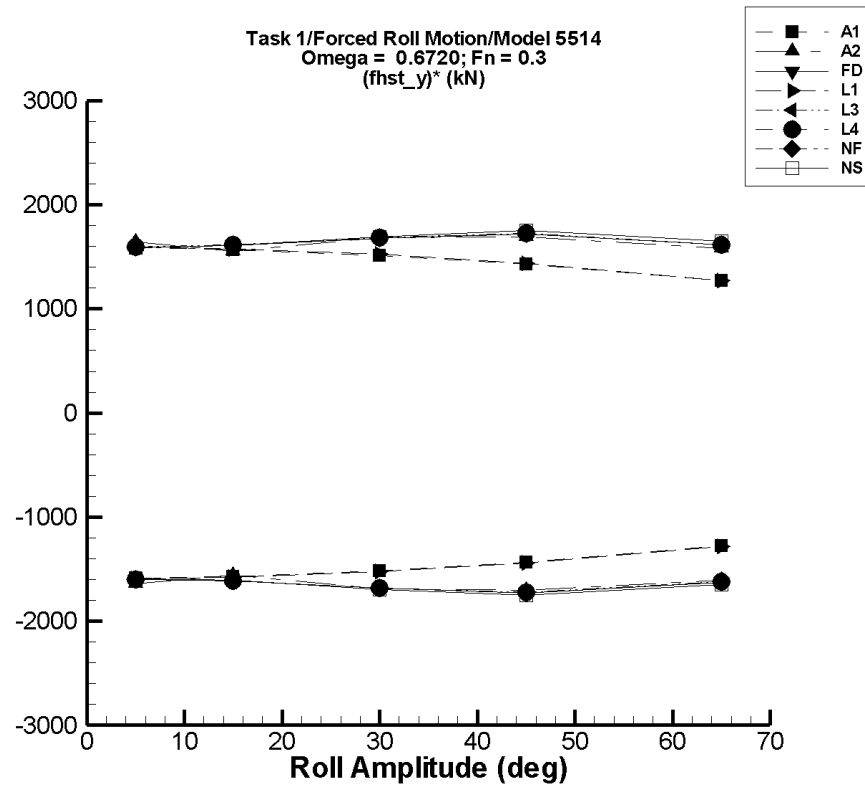


Figure N-54. Minimum and Maximum of  $(F_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-425. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.120	-8.02E+03	8.01E+03	-7.93E+03	7.92E+03	-1.59E+03	1.58E+03
15.	3.42	-2.38E+04	2.38E+04	-2.35E+04	2.35E+04	-1.57E+03	1.57E+03
30.	27.1	-4.60E+04	4.60E+04	-4.55E+04	4.55E+04	-1.52E+03	1.52E+03
45.	89.7	-6.50E+04	6.50E+04	-6.44E+04	6.44E+04	-1.43E+03	1.43E+03
65.	259.	-8.33E+04	8.33E+04	-8.28E+04	8.28E+04	-1.28E+03	1.27E+03

Table N-426. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.21	-8.30E+03	8.30E+03	-8.21E+03	8.21E+03	-1.64E+03	1.64E+03
15.	15.1	-2.36E+04	2.36E+04	-2.33E+04	2.33E+04	-1.56E+03	1.55E+03
30.	16.5	-5.12E+04	5.12E+04	-5.06E+04	5.06E+04	-1.69E+03	1.69E+03
45.	454.	-7.73E+04	7.74E+04	-7.62E+04	7.65E+04	-1.70E+03	1.69E+03
65.	703.	-1.04E+05	1.04E+05	-1.04E+05	1.03E+05	-1.61E+03	1.58E+03



Table N-427. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-3.99E-02	-8.04E+03	8.04E+03	-8.00E+03	7.95E+03	-1.60E+03	1.59E+03
15.	-5.58	-2.44E+04	2.44E+04	-2.42E+04	2.41E+04	-1.62E+03	1.61E+03
30.	-54.8	-5.09E+04	5.09E+04	-5.06E+04	5.03E+04	-1.68E+03	1.68E+03
45.	-87.4	-7.82E+04	7.82E+04	-7.78E+04	7.73E+04	-1.73E+03	1.72E+03
65.	127.	-1.06E+05	1.06E+05	-1.06E+05	1.05E+05	-1.63E+03	1.61E+03

Table N-428. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.302	-8.00E+03	8.00E+03	-7.97E+03	7.97E+03	-1.59E+03	1.59E+03
15.	4.61	-2.38E+04	2.38E+04	-2.37E+04	2.37E+04	-1.58E+03	1.58E+03
30.	33.7	-4.59E+04	4.59E+04	-4.57E+04	4.57E+04	-1.53E+03	1.52E+03
45.	110.	-6.49E+04	6.49E+04	-6.47E+04	6.47E+04	-1.44E+03	1.44E+03
65.	315.	-8.32E+04	8.32E+04	-8.30E+04	8.30E+04	-1.28E+03	1.27E+03

Table N-429. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.23E-02	-8.02E+03	8.02E+03	-7.99E+03	7.99E+03	-1.60E+03	1.60E+03
15.	-3.88	-2.43E+04	2.43E+04	-2.42E+04	2.42E+04	-1.61E+03	1.61E+03
30.	-41.4	-5.07E+04	5.07E+04	-5.05E+04	5.05E+04	-1.68E+03	1.68E+03
45.	-72.3	-7.79E+04	7.79E+04	-7.76E+04	7.76E+04	-1.72E+03	1.73E+03
65.	97.6	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

Table N-430. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.23E-02	-8.02E+03	8.02E+03	-7.99E+03	7.99E+03	-1.60E+03	1.60E+03
15.	-3.88	-2.43E+04	2.43E+04	-2.42E+04	2.42E+04	-1.61E+03	1.61E+03
30.	-41.4	-5.07E+04	5.07E+04	-5.05E+04	5.05E+04	-1.68E+03	1.68E+03
45.	-72.3	-7.79E+04	7.79E+04	-7.76E+04	7.76E+04	-1.72E+03	1.73E+03
65.	97.6	-1.05E+05	1.05E+05	-1.05E+05	1.05E+05	-1.62E+03	1.62E+03

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Table N-431. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-432. Minimum and Maximum of  $F_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{hst}}$		Filtered $F_y^{\text{hst}}$		Filtered $(F_y^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.13E-04	-8.03E+03	8.03E+03	-7.95E+03	7.95E+03	-1.59E+03	1.59E+03
15.	-1.20E-03	-2.43E+04	2.43E+04	-2.41E+04	2.41E+04	-1.61E+03	1.61E+03
30.	8.55E-03	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.69E+03	1.69E+03
45.	4.08E-02	-7.90E+04	7.90E+04	-7.89E+04	7.89E+04	-1.75E+03	1.75E+03
65.	70.5	-1.07E+05	1.07E+05	-1.07E+05	1.07E+05	-1.65E+03	1.65E+03

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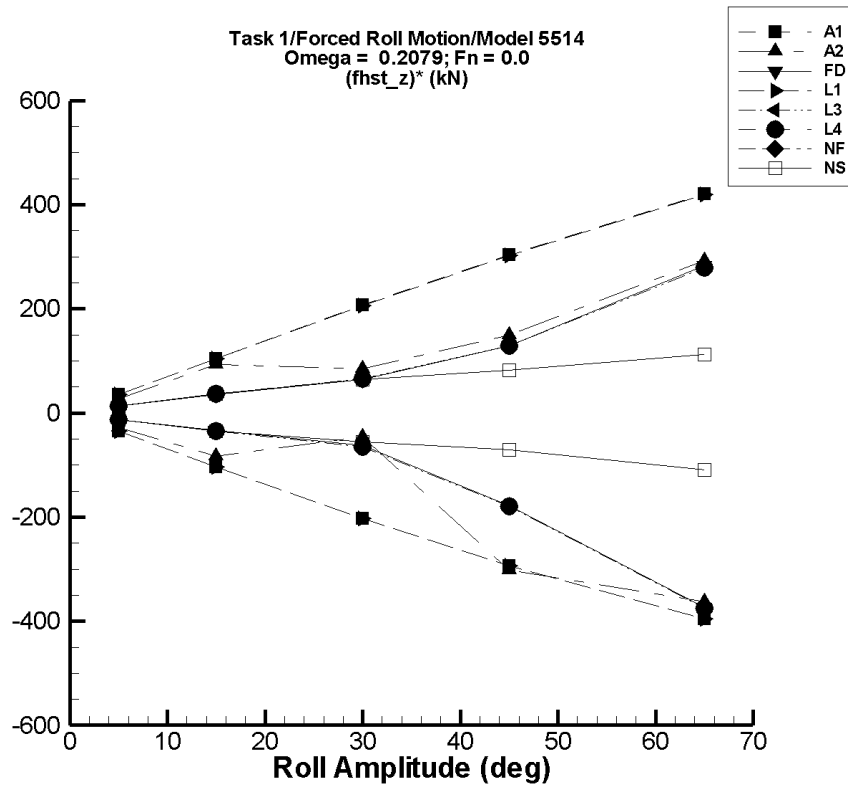


Figure N-55. Minimum and Maximum of  $(F_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-433. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-34.9	35.1
15.	9.04E+04	8.88E+04	9.20E+04	8.88E+04	9.20E+04	-104.	105.
30.	8.58E+04	7.96E+04	9.20E+04	7.97E+04	9.20E+04	-203.	207.
45.	7.83E+04	6.50E+04	9.20E+04	6.51E+04	9.20E+04	-294.	304.
65.	6.47E+04	3.89E+04	9.20E+04	3.90E+04	9.20E+04	-396.	420.

Table N-434. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-28.3	26.8
15.	9.06E+04	8.93E+04	9.20E+04	8.93E+04	9.20E+04	-83.4	93.7
30.	8.94E+04	8.17E+04	9.20E+04	8.80E+04	9.20E+04	-46.5	84.6
45.	8.53E+04	2.76E+04	1.20E+05	7.17E+04	9.20E+04	-301.	149.
65.	7.29E+04	3.91E+04	9.20E+04	4.94E+04	9.19E+04	-362.	293.

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Table N-435. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.7	13.1
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-34.0	36.0
30.	9.01E+04	8.82E+04	9.20E+04	8.82E+04	9.20E+04	-62.6	64.2
45.	8.62E+04	7.82E+04	9.20E+04	7.82E+04	9.20E+04	-178.	129.
65.	7.37E+04	4.93E+04	9.20E+04	4.94E+04	9.21E+04	-374.	283.

Table N-436. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-34.9	34.9
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-104.	104.
30.	8.56E+04	7.95E+04	9.18E+04	7.95E+04	9.18E+04	-204.	206.
45.	7.82E+04	6.49E+04	9.18E+04	6.49E+04	9.18E+04	-294.	302.
65.	6.45E+04	3.88E+04	9.18E+04	3.88E+04	9.18E+04	-396.	419.

Table N-437. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.9	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.6	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-65.0	65.8
45.	8.60E+04	7.79E+04	9.18E+04	7.79E+04	9.18E+04	-179.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.92E+04	9.18E+04	-375.	279.

Table N-438. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.9	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.6	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-65.0	65.8
45.	8.60E+04	7.79E+04	9.18E+04	7.79E+04	9.18E+04	-179.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.92E+04	9.18E+04	-375.	279.

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Table N–439. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–440. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-12.8	13.2
15.	9.14E+04	9.09E+04	9.20E+04	9.09E+04	9.20E+04	-34.5	36.9
30.	9.00E+04	8.84E+04	9.20E+04	8.84E+04	9.19E+04	-55.0	63.6
45.	8.83E+04	8.50E+04	9.20E+04	8.51E+04	9.19E+04	-71.1	82.1
65.	8.47E+04	7.75E+04	9.20E+04	7.76E+04	9.19E+04	-109.	112.



# TASK 1/ROLL MOTION/MODEL 5514

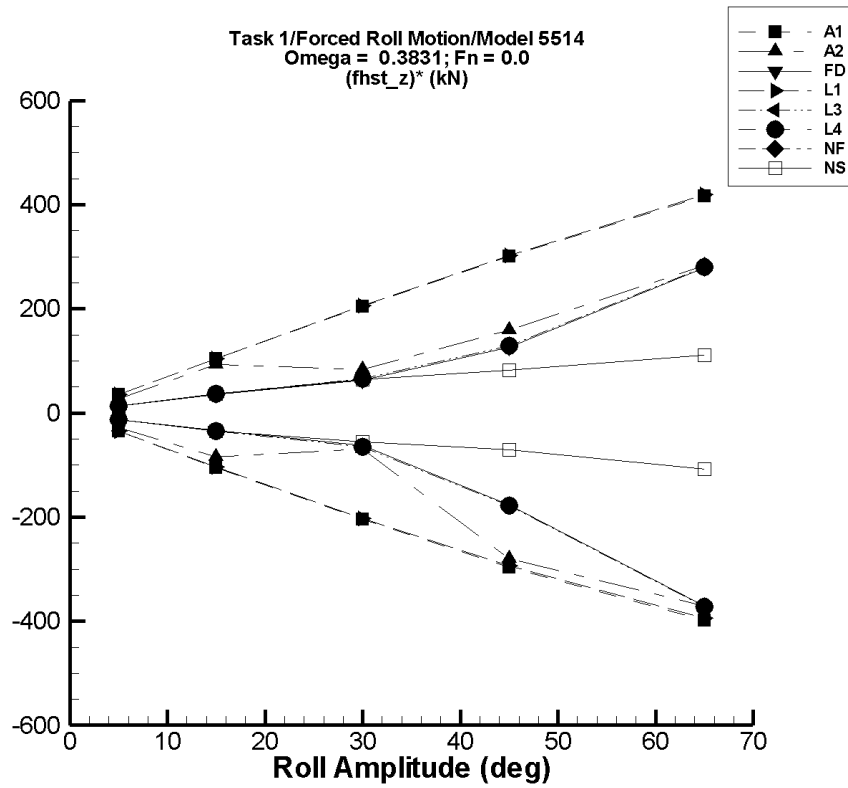


Figure N-56. Minimum and Maximum of  $(F_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-441. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-35.1	34.8
15.	9.04E+04	8.88E+04	9.20E+04	8.88E+04	9.20E+04	-104.	104.
30.	8.58E+04	7.96E+04	9.20E+04	7.96E+04	9.19E+04	-205.	205.
45.	7.83E+04	6.50E+04	9.20E+04	6.50E+04	9.19E+04	-296.	301.
65.	6.47E+04	3.89E+04	9.20E+04	3.88E+04	9.18E+04	-398.	417.

Table N-442. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-28.5	26.4
15.	9.06E+04	8.93E+04	9.20E+04	8.93E+04	9.20E+04	-84.1	93.0
30.	8.94E+04	8.11E+04	9.20E+04	8.73E+04	9.19E+04	-69.8	83.4
45.	8.47E+04	2.76E+04	1.18E+05	7.22E+04	9.19E+04	-279.	159.
65.	7.33E+04	4.92E+04	9.20E+04	4.92E+04	9.17E+04	-371.	283.

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Table N-443. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.5	12.9
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-33.7	35.5
30.	9.01E+04	8.82E+04	9.20E+04	8.82E+04	9.20E+04	-61.9	63.3
45.	8.63E+04	7.82E+04	9.20E+04	7.83E+04	9.20E+04	-176.	126.
65.	7.38E+04	4.93E+04	9.20E+04	4.97E+04	9.19E+04	-370.	279.

Table N-444. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-34.7	35.0
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-104.	105.
30.	8.56E+04	7.95E+04	9.18E+04	7.95E+04	9.18E+04	-203.	206.
45.	7.82E+04	6.49E+04	9.18E+04	6.50E+04	9.18E+04	-293.	303.
65.	6.45E+04	3.88E+04	9.18E+04	3.89E+04	9.18E+04	-394.	420.

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Table N-445. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.8	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.5	36.3
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-64.7	66.0
45.	8.60E+04	7.79E+04	9.18E+04	7.80E+04	9.18E+04	-178.	130.
65.	7.35E+04	4.92E+04	9.18E+04	4.93E+04	9.18E+04	-373.	281.

Table N-446. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.8	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.5	36.3
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-64.7	66.0
45.	8.60E+04	7.79E+04	9.18E+04	7.80E+04	9.18E+04	-178.	130.
65.	7.35E+04	4.92E+04	9.18E+04	4.93E+04	9.18E+04	-373.	281.

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Table N-447. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-448. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-12.8	13.2
15.	9.14E+04	9.09E+04	9.20E+04	9.09E+04	9.20E+04	-34.5	36.9
30.	9.00E+04	8.84E+04	9.20E+04	8.84E+04	9.19E+04	-55.0	63.6
45.	8.83E+04	8.50E+04	9.20E+04	8.51E+04	9.19E+04	-71.1	82.1
65.	8.47E+04	7.76E+04	9.20E+04	7.76E+04	9.20E+04	-109.	112.

# TASK 1/ROLL MOTION/MODEL 5514

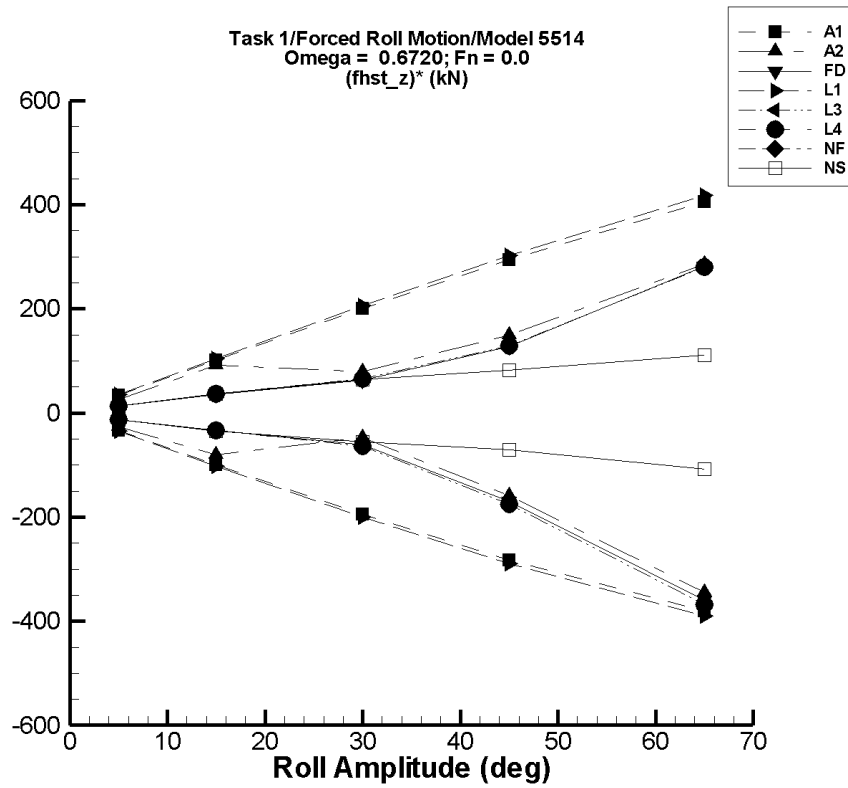


Figure N-57. Minimum and Maximum of  $(F_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

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Table N-449. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-33.4	34.0
15.	9.04E+04	8.88E+04	9.20E+04	8.89E+04	9.19E+04	-99.5	102.
30.	8.58E+04	7.96E+04	9.20E+04	7.99E+04	9.18E+04	-195.	200.
45.	7.83E+04	6.50E+04	9.20E+04	6.56E+04	9.15E+04	-282.	294.
65.	6.47E+04	3.89E+04	9.20E+04	4.00E+04	9.11E+04	-380.	406.

Table N-450. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-27.0	25.5
15.	9.06E+04	8.93E+04	9.20E+04	8.94E+04	9.19E+04	-80.7	91.2
30.	8.94E+04	8.22E+04	9.20E+04	8.79E+04	9.17E+04	-47.6	79.2
45.	8.51E+04	3.97E+04	9.20E+04	7.80E+04	9.19E+04	-159.	149.
65.	7.29E+04	2.67E+04	9.20E+04	5.05E+04	9.15E+04	-344.	286.

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Table N-451. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.3	12.7
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-33.2	34.9
30.	9.01E+04	8.82E+04	9.20E+04	8.83E+04	9.20E+04	-60.6	62.2
45.	8.62E+04	7.82E+04	9.20E+04	7.86E+04	9.19E+04	-169.	127.
65.	7.37E+04	4.93E+04	9.20E+04	5.03E+04	9.19E+04	-360.	281.

Table N-452. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-34.4	34.9
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-102.	104.
30.	8.56E+04	7.95E+04	9.18E+04	7.96E+04	9.18E+04	-200.	206.
45.	7.82E+04	6.49E+04	9.18E+04	6.51E+04	9.18E+04	-290.	302.
65.	6.45E+04	3.88E+04	9.18E+04	3.92E+04	9.18E+04	-390.	419.



Table N-453. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.7	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.1	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-63.9	65.7
45.	8.60E+04	7.79E+04	9.18E+04	7.81E+04	9.18E+04	-175.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.97E+04	9.18E+04	-368.	281.

Table N-454. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.7	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.1	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-63.9	65.7
45.	8.60E+04	7.79E+04	9.18E+04	7.81E+04	9.18E+04	-175.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.97E+04	9.18E+04	-368.	281.

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Table N-455. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-456. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-12.8	13.2
15.	9.14E+04	9.09E+04	9.20E+04	9.09E+04	9.20E+04	-34.5	36.9
30.	9.00E+04	8.84E+04	9.20E+04	8.84E+04	9.19E+04	-55.0	63.6
45.	8.83E+04	8.50E+04	9.20E+04	8.51E+04	9.19E+04	-71.1	82.1
65.	8.47E+04	7.76E+04	9.20E+04	7.76E+04	9.20E+04	-108.	112.

# TASK 1/ROLL MOTION/MODEL 5514

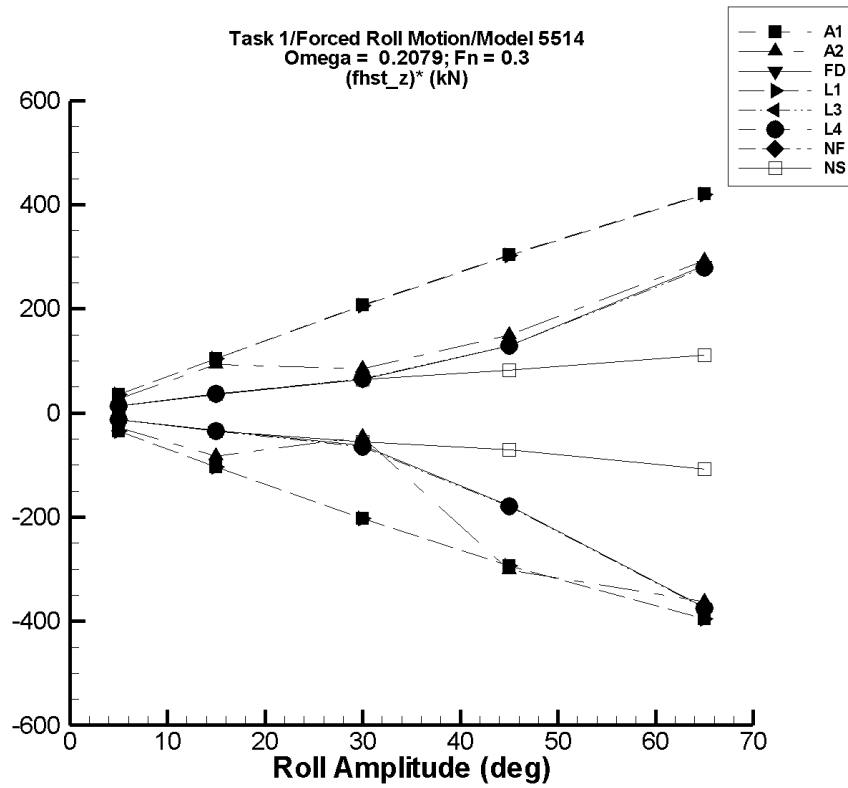


Figure N-58. Minimum and Maximum of  $(F_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-457. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-34.9	35.1
15.	9.04E+04	8.88E+04	9.20E+04	8.88E+04	9.20E+04	-104.	105.
30.	8.58E+04	7.96E+04	9.20E+04	7.97E+04	9.20E+04	-203.	207.
45.	7.83E+04	6.50E+04	9.20E+04	6.51E+04	9.20E+04	-294.	304.
65.	6.47E+04	3.89E+04	9.20E+04	3.90E+04	9.20E+04	-396.	420.

Table N-458. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-28.3	26.8
15.	9.06E+04	8.93E+04	9.20E+04	8.93E+04	9.20E+04	-83.4	93.7
30.	8.94E+04	8.17E+04	9.20E+04	8.80E+04	9.20E+04	-46.5	84.6
45.	8.53E+04	2.76E+04	1.20E+05	7.17E+04	9.20E+04	-301.	149.
65.	7.29E+04	3.91E+04	9.20E+04	4.94E+04	9.19E+04	-362.	293.

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Table N-459. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.7	13.1
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-34.0	36.0
30.	9.01E+04	8.82E+04	9.20E+04	8.82E+04	9.20E+04	-62.6	64.2
45.	8.62E+04	7.82E+04	9.20E+04	7.82E+04	9.20E+04	-178.	129.
65.	7.37E+04	4.93E+04	9.20E+04	4.94E+04	9.21E+04	-374.	283.

Table N-460. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-34.9	34.9
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-104.	104.
30.	8.56E+04	7.95E+04	9.18E+04	7.95E+04	9.18E+04	-204.	206.
45.	7.82E+04	6.49E+04	9.18E+04	6.49E+04	9.18E+04	-294.	302.
65.	6.45E+04	3.88E+04	9.18E+04	3.88E+04	9.18E+04	-396.	419.

Table N-461. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.9	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.6	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-65.0	65.8
45.	8.60E+04	7.79E+04	9.18E+04	7.79E+04	9.18E+04	-179.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.92E+04	9.18E+04	-375.	279.

Table N-462. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.9	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.6	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-65.0	65.8
45.	8.60E+04	7.79E+04	9.18E+04	7.79E+04	9.18E+04	-179.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.92E+04	9.18E+04	-375.	279.

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Table N-463. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-464. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-12.8	13.2
15.	9.14E+04	9.09E+04	9.20E+04	9.09E+04	9.20E+04	-34.5	36.9
30.	9.00E+04	8.84E+04	9.20E+04	8.84E+04	9.19E+04	-55.0	63.6
45.	8.83E+04	8.50E+04	9.20E+04	8.51E+04	9.19E+04	-71.1	82.1
65.	8.47E+04	7.76E+04	9.20E+04	7.76E+04	9.20E+04	-108.	112.

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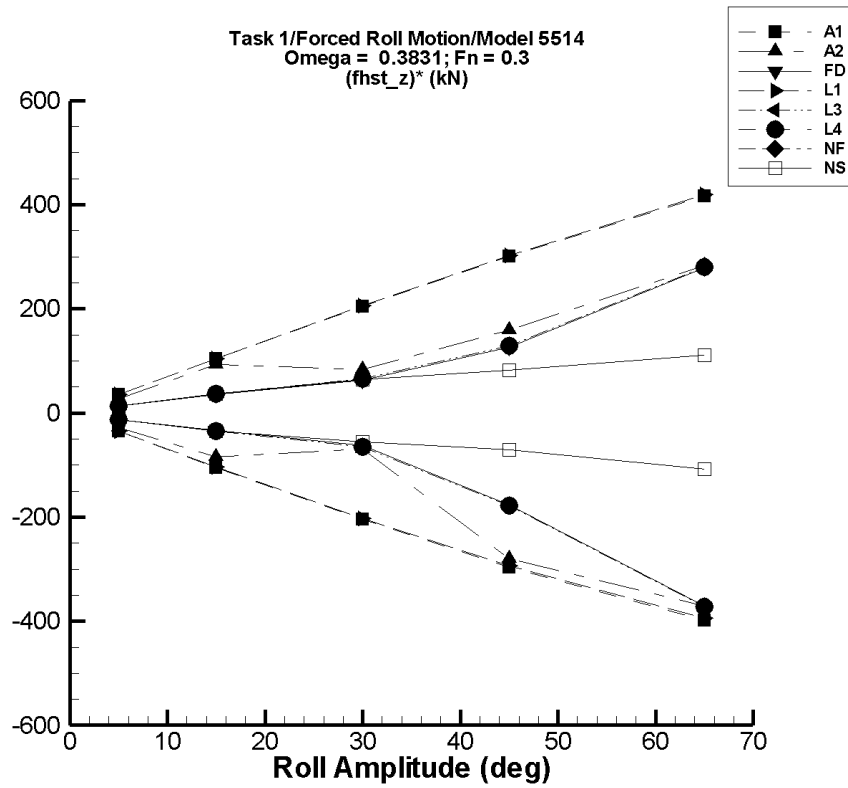


Figure N-59. Minimum and Maximum of  $(F_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.



Table N-465. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-35.1	34.8
15.	9.04E+04	8.88E+04	9.20E+04	8.88E+04	9.20E+04	-104.	104.
30.	8.58E+04	7.96E+04	9.20E+04	7.96E+04	9.19E+04	-205.	205.
45.	7.83E+04	6.50E+04	9.20E+04	6.50E+04	9.19E+04	-296.	301.
65.	6.47E+04	3.89E+04	9.20E+04	3.88E+04	9.18E+04	-398.	417.

Table N-466. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-28.5	26.4
15.	9.06E+04	8.93E+04	9.20E+04	8.93E+04	9.20E+04	-84.1	93.0
30.	8.94E+04	8.11E+04	9.20E+04	8.73E+04	9.19E+04	-69.8	83.4
45.	8.47E+04	2.76E+04	1.18E+05	7.22E+04	9.19E+04	-279.	159.
65.	7.33E+04	4.92E+04	9.20E+04	4.92E+04	9.17E+04	-371.	283.

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Table N-467. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.5	12.9
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-33.7	35.5
30.	9.01E+04	8.82E+04	9.20E+04	8.82E+04	9.20E+04	-61.9	63.3
45.	8.63E+04	7.82E+04	9.20E+04	7.83E+04	9.20E+04	-176.	126.
65.	7.38E+04	4.93E+04	9.20E+04	4.97E+04	9.19E+04	-370.	279.

Table N-468. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-34.7	35.0
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-104.	105.
30.	8.56E+04	7.95E+04	9.18E+04	7.95E+04	9.18E+04	-203.	206.
45.	7.82E+04	6.49E+04	9.18E+04	6.50E+04	9.18E+04	-293.	303.
65.	6.45E+04	3.88E+04	9.18E+04	3.89E+04	9.18E+04	-394.	420.

Table N-469. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.8	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.5	36.3
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-64.7	66.0
45.	8.60E+04	7.79E+04	9.18E+04	7.80E+04	9.18E+04	-178.	130.
65.	7.35E+04	4.92E+04	9.18E+04	4.93E+04	9.18E+04	-373.	281.

Table N-470. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.8	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.5	36.3
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-64.7	66.0
45.	8.60E+04	7.79E+04	9.18E+04	7.80E+04	9.18E+04	-178.	130.
65.	7.35E+04	4.92E+04	9.18E+04	4.93E+04	9.18E+04	-373.	281.

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Table N-471. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-472. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-12.8	13.2
15.	9.14E+04	9.09E+04	9.20E+04	9.09E+04	9.20E+04	-34.5	36.9
30.	9.00E+04	8.84E+04	9.20E+04	8.84E+04	9.19E+04	-55.0	63.6
45.	8.83E+04	8.50E+04	9.20E+04	8.51E+04	9.19E+04	-71.1	82.1
65.	8.47E+04	7.76E+04	9.20E+04	7.76E+04	9.20E+04	-109.	112.

# TASK 1/ROLL MOTION/MODEL 5514

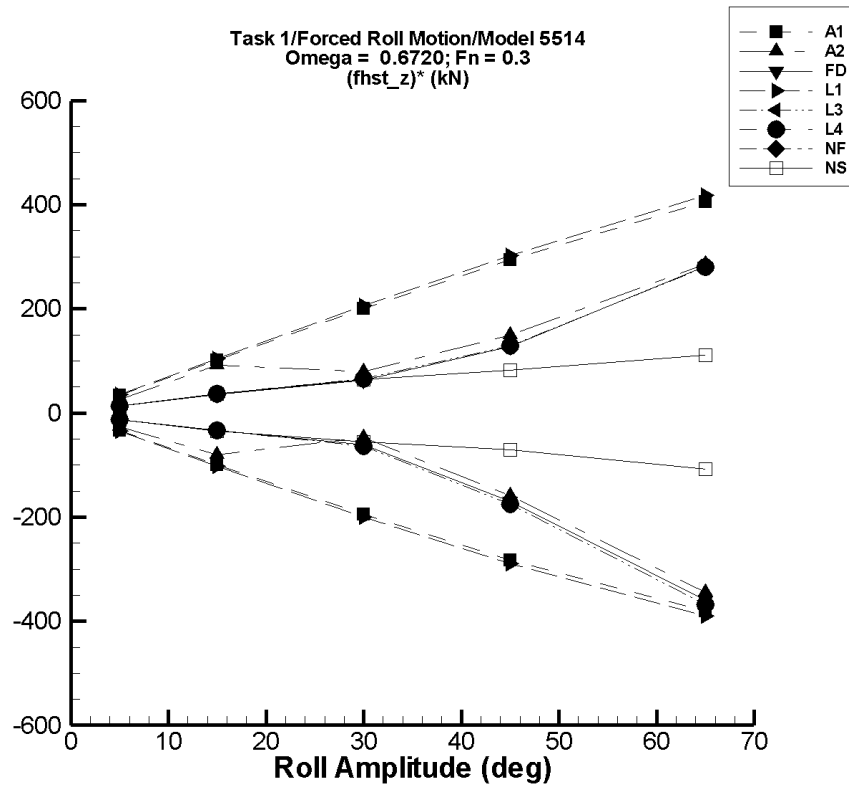


Figure N-60. Minimum and Maximum of  $(F_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-473. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.16E+04	9.20E+04	9.16E+04	9.20E+04	-33.4	34.0
15.	9.04E+04	8.88E+04	9.20E+04	8.89E+04	9.19E+04	-99.5	102.
30.	8.58E+04	7.96E+04	9.20E+04	7.99E+04	9.18E+04	-195.	200.
45.	7.83E+04	6.50E+04	9.20E+04	6.56E+04	9.15E+04	-282.	294.
65.	6.47E+04	3.89E+04	9.20E+04	4.00E+04	9.11E+04	-380.	406.

Table N-474. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.18E+04	9.17E+04	9.20E+04	9.17E+04	9.20E+04	-27.0	25.5
15.	9.06E+04	8.93E+04	9.20E+04	8.94E+04	9.19E+04	-80.7	91.2
30.	8.94E+04	8.22E+04	9.20E+04	8.79E+04	9.17E+04	-47.6	79.2
45.	8.51E+04	3.97E+04	9.20E+04	7.80E+04	9.19E+04	-159.	149.
65.	7.29E+04	2.67E+04	9.20E+04	5.05E+04	9.15E+04	-344.	286.

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Table N-475. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.20E+04	9.19E+04	9.20E+04	9.19E+04	9.20E+04	-12.3	12.7
15.	9.15E+04	9.10E+04	9.20E+04	9.10E+04	9.20E+04	-33.2	34.9
30.	9.01E+04	8.82E+04	9.20E+04	8.83E+04	9.20E+04	-60.6	62.2
45.	8.62E+04	7.82E+04	9.20E+04	7.86E+04	9.19E+04	-169.	127.
65.	7.37E+04	4.93E+04	9.20E+04	5.03E+04	9.19E+04	-360.	281.

Table N-476. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.16E+04	9.14E+04	9.18E+04	9.14E+04	9.18E+04	-34.4	34.9
15.	9.02E+04	8.87E+04	9.18E+04	8.87E+04	9.18E+04	-102.	104.
30.	8.56E+04	7.95E+04	9.18E+04	7.96E+04	9.18E+04	-200.	206.
45.	7.82E+04	6.49E+04	9.18E+04	6.51E+04	9.18E+04	-290.	302.
65.	6.45E+04	3.88E+04	9.18E+04	3.92E+04	9.18E+04	-390.	419.

Table N-477. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.7	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.1	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-63.9	65.7
45.	8.60E+04	7.79E+04	9.18E+04	7.81E+04	9.18E+04	-175.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.97E+04	9.18E+04	-368.	281.

Table N-478. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.17E+04	9.17E+04	9.18E+04	9.17E+04	9.18E+04	-12.7	13.1
15.	9.12E+04	9.07E+04	9.18E+04	9.07E+04	9.18E+04	-34.1	36.2
30.	8.98E+04	8.79E+04	9.18E+04	8.79E+04	9.18E+04	-63.9	65.7
45.	8.60E+04	7.79E+04	9.18E+04	7.81E+04	9.18E+04	-175.	129.
65.	7.36E+04	4.92E+04	9.18E+04	4.97E+04	9.18E+04	-368.	281.



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Table N-479. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-480. Minimum and Maximum of  $F_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{hst}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{hst}}$		Filtered $F_z^{\text{hst}}$		Filtered $(F_z^{\text{hst}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	9.19E+04	9.18E+04	9.20E+04	9.18E+04	9.20E+04	-12.8	13.2
15.	9.14E+04	9.09E+04	9.20E+04	9.09E+04	9.20E+04	-34.5	36.9
30.	9.00E+04	8.84E+04	9.20E+04	8.84E+04	9.19E+04	-55.0	63.6
45.	8.83E+04	8.50E+04	9.20E+04	8.51E+04	9.19E+04	-71.1	82.1
65.	8.47E+04	7.76E+04	9.20E+04	7.76E+04	9.20E+04	-108.	112.

# TASK 1/ROLL MOTION/MODEL 5514

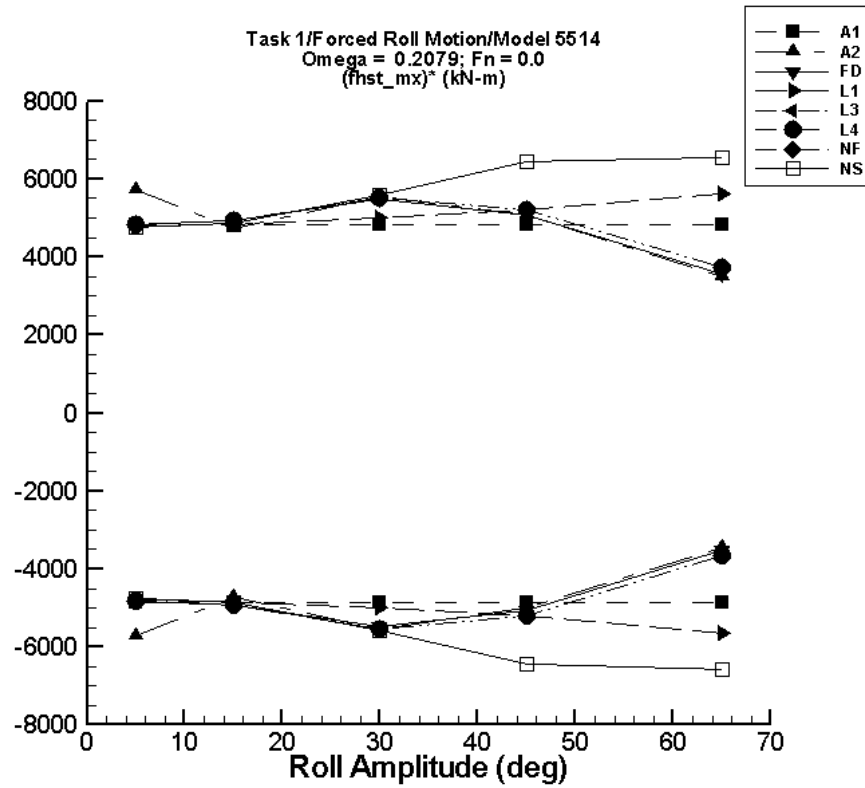


Figure N-61. Minimum and Maximum of  $(M_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-481. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.99E-02	-2.42E+04	2.42E+04	-2.42E+04	2.42E+04	-4.85E+03	4.84E+03
15.	5.54E-02	-7.26E+04	7.26E+04	-7.27E+04	7.26E+04	-4.84E+03	4.84E+03
30.	0.110	-1.45E+05	1.45E+05	-1.45E+05	1.45E+05	-4.84E+03	4.84E+03
45.	0.189	-2.18E+05	2.18E+05	-2.18E+05	2.18E+05	-4.84E+03	4.84E+03
65.	0.262	-3.15E+05	3.15E+05	-3.15E+05	3.14E+05	-4.84E+03	4.84E+03

Table N-482. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-11.9	-2.85E+04	2.85E+04	-2.86E+04	2.85E+04	-5.71E+03	5.71E+03
15.	-117.	-7.09E+04	7.09E+04	-7.09E+04	7.09E+04	-4.72E+03	4.73E+03
30.	25.9	-1.67E+05	1.67E+05	-1.67E+05	1.67E+05	-5.56E+03	5.55E+03
45.	-646.	-2.83E+05	2.25E+05	-2.25E+05	2.27E+05	-4.99E+03	5.06E+03
65.	-722.	-2.27E+05	2.27E+05	-2.26E+05	2.26E+05	-3.46E+03	3.49E+03

Table N-483. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.255	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.82E+03	4.82E+03
15.	13.9	-7.41E+04	7.41E+04	-7.40E+04	7.40E+04	-4.94E+03	4.93E+03
30.	156.	-1.65E+05	1.64E+05	-1.64E+05	1.64E+05	-5.48E+03	5.47E+03
45.	34.7	-2.27E+05	2.27E+05	-2.28E+05	2.27E+05	-5.06E+03	5.05E+03
65.	-1.13E+03	-2.31E+05	2.31E+05	-2.30E+05	2.30E+05	-3.52E+03	3.56E+03

Table N-484. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.426	-2.40E+04	2.40E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	10.9	-7.27E+04	7.27E+04	-7.26E+04	7.26E+04	-4.84E+03	4.84E+03
30.	86.0	-1.50E+05	1.50E+05	-1.50E+05	1.50E+05	-4.99E+03	4.98E+03
45.	284.	-2.35E+05	2.35E+05	-2.35E+05	2.35E+05	-5.22E+03	5.21E+03
65.	824.	-3.67E+05	3.67E+05	-3.67E+05	3.67E+05	-5.65E+03	5.63E+03

Table N-485. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.64	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.82E+03	4.81E+03
15.	28.1	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.93E+03
30.	365.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.53E+03
45.	86.6	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.64E+03	-2.40E+05	2.40E+05	-2.40E+05	2.40E+05	-3.65E+03	3.73E+03

Table N-486. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.64	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.82E+03	4.81E+03
15.	28.1	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.93E+03
30.	365.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.53E+03
45.	86.6	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.64E+03	-2.40E+05	2.40E+05	-2.40E+05	2.40E+05	-3.65E+03	3.73E+03

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Table N-487. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-488. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.63E-03	-2.40E+04	2.40E+04	-2.38E+04	2.38E+04	-4.75E+03	4.75E+03
15.	-1.99E-03	-7.37E+04	7.37E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	4.52E-04	-1.68E+05	1.68E+05	-1.67E+05	1.67E+05	-5.57E+03	5.57E+03
45.	-0.722	-2.91E+05	2.91E+05	-2.90E+05	2.90E+05	-6.45E+03	6.45E+03
65.	-850.	-4.29E+05	4.25E+05	-4.29E+05	4.25E+05	-6.58E+03	6.55E+03

# TASK 1/ROLL MOTION/MODEL 5514

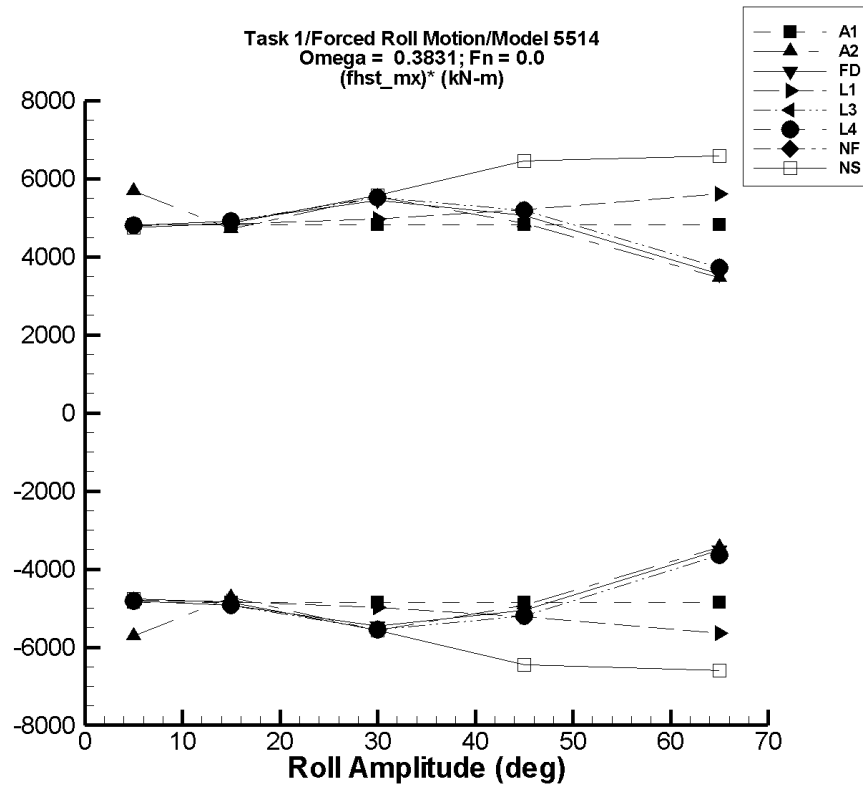


Figure N-62. Minimum and Maximum of  $(M_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-489. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.36E-03	-2.42E+04	2.42E+04	-2.43E+04	2.41E+04	-4.86E+03	4.83E+03
15.	-9.24E-03	-7.26E+04	7.26E+04	-7.28E+04	7.24E+04	-4.86E+03	4.83E+03
30.	-1.30E-02	-1.45E+05	1.45E+05	-1.46E+05	1.45E+05	-4.86E+03	4.83E+03
45.	-1.91E-02	-2.18E+05	2.18E+05	-2.19E+05	2.17E+05	-4.86E+03	4.83E+03
65.	-1.96E-02	-3.15E+05	3.15E+05	-3.16E+05	3.14E+05	-4.86E+03	4.83E+03

Table N-490. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-11.2	-2.85E+04	2.85E+04	-2.86E+04	2.84E+04	-5.71E+03	5.69E+03
15.	-110.	-7.09E+04	7.09E+04	-7.10E+04	7.07E+04	-4.73E+03	4.72E+03
30.	-41.7	-1.67E+05	1.67E+05	-1.67E+05	1.66E+05	-5.56E+03	5.54E+03
45.	-3.89E+03	-2.83E+05	2.25E+05	-2.26E+05	2.15E+05	-4.93E+03	4.86E+03
65.	-740.	-2.27E+05	2.27E+05	-2.24E+05	2.24E+05	-3.44E+03	3.47E+03



Table N-491. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.295	-2.41E+04	2.41E+04	-2.41E+04	2.40E+04	-4.81E+03	4.81E+03
15.	14.5	-7.41E+04	7.41E+04	-7.38E+04	7.38E+04	-4.92E+03	4.92E+03
30.	158.	-1.64E+05	1.64E+05	-1.64E+05	1.64E+05	-5.46E+03	5.45E+03
45.	-125.	-2.27E+05	2.27E+05	-2.27E+05	2.27E+05	-5.05E+03	5.05E+03
65.	-1.28E+03	-2.31E+05	2.31E+05	-2.29E+05	2.29E+05	-3.51E+03	3.55E+03

Table N-492. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.247	-2.40E+04	2.40E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	9.88	-7.27E+04	7.27E+04	-7.26E+04	7.26E+04	-4.84E+03	4.84E+03
30.	82.2	-1.50E+05	1.50E+05	-1.49E+05	1.49E+05	-4.98E+03	4.98E+03
45.	276.	-2.35E+05	2.35E+05	-2.34E+05	2.34E+05	-5.21E+03	5.20E+03
65.	801.	-3.67E+05	3.67E+05	-3.66E+05	3.66E+05	-5.64E+03	5.62E+03

Table N-493. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.54	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.81E+03	4.81E+03
15.	26.6	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.92E+03
30.	352.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.52E+03
45.	185.	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.44E+03	-2.40E+05	2.40E+05	-2.39E+05	2.39E+05	-3.64E+03	3.72E+03

Table N-494. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.54	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.81E+03	4.81E+03
15.	26.6	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.92E+03
30.	352.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.52E+03
45.	185.	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.44E+03	-2.40E+05	2.40E+05	-2.39E+05	2.39E+05	-3.64E+03	3.72E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-495. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-496. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-4.64E-04	-2.40E+04	2.40E+04	-2.38E+04	2.38E+04	-4.75E+03	4.75E+03
15.	5.78E-03	-7.37E+04	7.37E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	-1.08E-03	-1.68E+05	1.68E+05	-1.67E+05	1.67E+05	-5.57E+03	5.57E+03
45.	0.993	-2.91E+05	2.91E+05	-2.90E+05	2.90E+05	-6.45E+03	6.45E+03
65.	-657.	-4.30E+05	4.27E+05	-4.30E+05	4.27E+05	-6.60E+03	6.58E+03

# TASK 1/ROLL MOTION/MODEL 5514

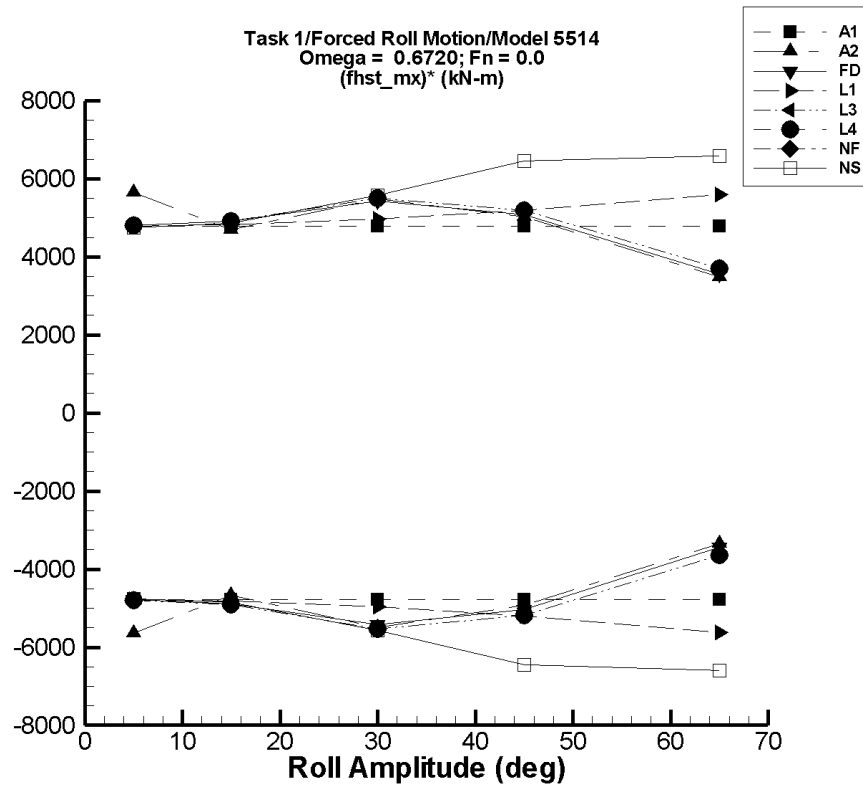


Figure N-63. Minimum and Maximum of  $(M_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-497. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.47E-02	-2.42E+04	2.42E+04	-2.39E+04	2.39E+04	-4.79E+03	4.79E+03
15.	6.91E-02	-7.26E+04	7.26E+04	-7.18E+04	7.18E+04	-4.79E+03	4.79E+03
30.	0.138	-1.45E+05	1.45E+05	-1.44E+05	1.44E+05	-4.79E+03	4.79E+03
45.	0.227	-2.18E+05	2.18E+05	-2.15E+05	2.15E+05	-4.79E+03	4.79E+03
65.	0.308	-3.15E+05	3.15E+05	-3.11E+05	3.11E+05	-4.79E+03	4.79E+03

Table N-498. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-20.7	-2.85E+04	2.85E+04	-2.82E+04	2.82E+04	-5.64E+03	5.65E+03
15.	-183.	-7.09E+04	7.09E+04	-7.01E+04	7.01E+04	-4.66E+03	4.69E+03
30.	76.7	-1.67E+05	1.67E+05	-1.65E+05	1.65E+05	-5.49E+03	5.49E+03
45.	-2.05E+03	-2.25E+05	2.25E+05	-2.24E+05	2.24E+05	-4.93E+03	5.03E+03
65.	-4.48E+03	-2.27E+05	2.27E+05	-2.22E+05	2.22E+05	-3.35E+03	3.49E+03

Table N-499. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.689	-2.41E+04	2.41E+04	-2.39E+04	2.40E+04	-4.77E+03	4.80E+03
15.	37.1	-7.41E+04	7.41E+04	-7.32E+04	7.37E+04	-4.88E+03	4.91E+03
30.	406.	-1.64E+05	1.64E+05	-1.62E+05	1.63E+05	-5.42E+03	5.43E+03
45.	-229.	-2.27E+05	2.27E+05	-2.27E+05	2.28E+05	-5.03E+03	5.08E+03
65.	-3.44E+03	-2.31E+05	2.31E+05	-2.27E+05	2.27E+05	-3.44E+03	3.55E+03

Table N-500. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.69E-02	-2.40E+04	2.40E+04	-2.39E+04	2.39E+04	-4.78E+03	4.78E+03
15.	9.48	-7.27E+04	7.27E+04	-7.24E+04	7.23E+04	-4.82E+03	4.82E+03
30.	83.1	-1.50E+05	1.50E+05	-1.49E+05	1.49E+05	-4.97E+03	4.96E+03
45.	280.	-2.35E+05	2.35E+05	-2.34E+05	2.34E+05	-5.20E+03	5.18E+03
65.	815.	-3.67E+05	3.67E+05	-3.65E+05	3.65E+05	-5.62E+03	5.60E+03

Table N-501. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.16	-2.41E+04	2.41E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	26.6	-7.40E+04	7.39E+04	-7.36E+04	7.36E+04	-4.91E+03	4.91E+03
30.	362.	-1.66E+05	1.66E+05	-1.65E+05	1.65E+05	-5.53E+03	5.50E+03
45.	-42.8	-2.34E+05	2.34E+05	-2.33E+05	2.33E+05	-5.18E+03	5.19E+03
65.	-2.66E+03	-2.40E+05	2.40E+05	-2.40E+05	2.38E+05	-3.65E+03	3.70E+03

Table N-502. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.16	-2.41E+04	2.41E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	26.6	-7.40E+04	7.39E+04	-7.36E+04	7.36E+04	-4.91E+03	4.91E+03
30.	362.	-1.66E+05	1.66E+05	-1.65E+05	1.65E+05	-5.53E+03	5.50E+03
45.	-42.8	-2.34E+05	2.34E+05	-2.33E+05	2.33E+05	-5.18E+03	5.19E+03
65.	-2.66E+03	-2.40E+05	2.40E+05	-2.40E+05	2.38E+05	-3.65E+03	3.70E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-503. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-504. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.73E-03	-2.40E+04	2.40E+04	-2.38E+04	2.38E+04	-4.75E+03	4.75E+03
15.	5.54E-03	-7.37E+04	7.37E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	-2.46E-02	-1.68E+05	1.68E+05	-1.67E+05	1.67E+05	-5.57E+03	5.57E+03
45.	-0.385	-2.91E+05	2.91E+05	-2.90E+05	2.90E+05	-6.45E+03	6.45E+03
65.	-643.	-4.30E+05	4.27E+05	-4.30E+05	4.27E+05	-6.60E+03	6.58E+03



# TASK 1/ROLL MOTION/MODEL 5514

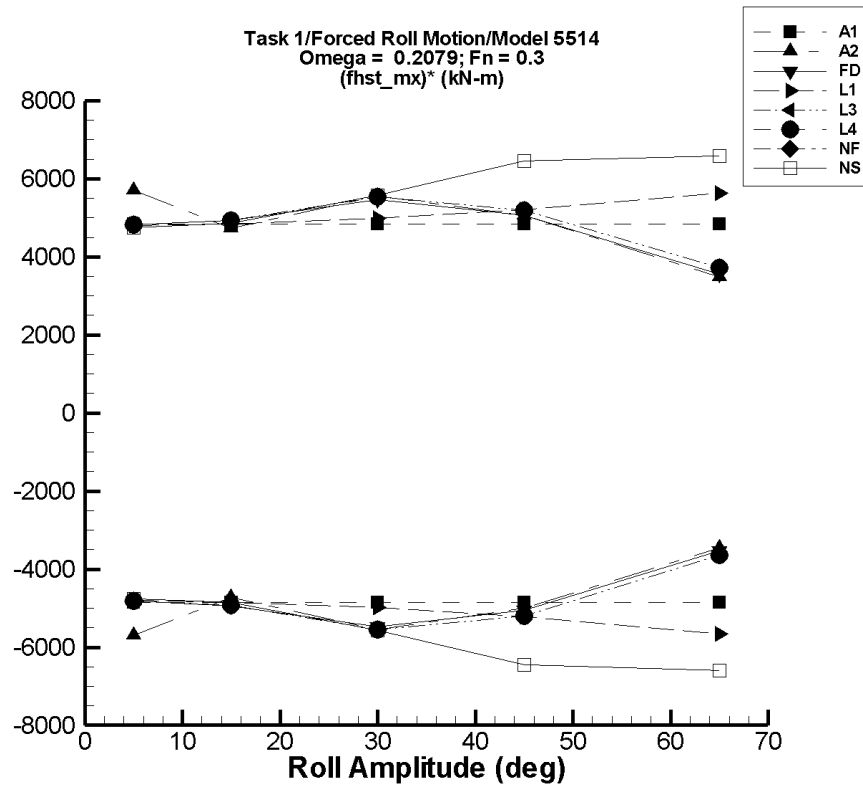


Figure N-64. Minimum and Maximum of  $(M_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-505. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.99E-02	-2.42E+04	2.42E+04	-2.42E+04	2.42E+04	-4.85E+03	4.84E+03
15.	5.54E-02	-7.26E+04	7.26E+04	-7.27E+04	7.26E+04	-4.84E+03	4.84E+03
30.	0.110	-1.45E+05	1.45E+05	-1.45E+05	1.45E+05	-4.84E+03	4.84E+03
45.	0.189	-2.18E+05	2.18E+05	-2.18E+05	2.18E+05	-4.84E+03	4.84E+03
65.	0.262	-3.15E+05	3.15E+05	-3.15E+05	3.14E+05	-4.84E+03	4.84E+03

Table N-506. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-12.2	-2.85E+04	2.85E+04	-2.85E+04	2.85E+04	-5.70E+03	5.71E+03
15.	-117.	-7.09E+04	7.09E+04	-7.09E+04	7.09E+04	-4.72E+03	4.73E+03
30.	25.9	-1.67E+05	1.67E+05	-1.67E+05	1.67E+05	-5.56E+03	5.55E+03
45.	-646.	-2.83E+05	2.25E+05	-2.25E+05	2.27E+05	-4.99E+03	5.06E+03
65.	-722.	-2.27E+05	2.27E+05	-2.26E+05	2.26E+05	-3.46E+03	3.49E+03

Table N-507. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.253	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.82E+03	4.82E+03
15.	13.9	-7.41E+04	7.41E+04	-7.40E+04	7.40E+04	-4.94E+03	4.93E+03
30.	156.	-1.65E+05	1.64E+05	-1.64E+05	1.64E+05	-5.48E+03	5.47E+03
45.	34.7	-2.27E+05	2.27E+05	-2.28E+05	2.27E+05	-5.06E+03	5.05E+03
65.	-1.13E+03	-2.31E+05	2.31E+05	-2.30E+05	2.30E+05	-3.52E+03	3.56E+03

Table N-508. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.426	-2.40E+04	2.40E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	10.9	-7.27E+04	7.27E+04	-7.26E+04	7.26E+04	-4.84E+03	4.84E+03
30.	86.0	-1.50E+05	1.50E+05	-1.50E+05	1.50E+05	-4.99E+03	4.98E+03
45.	284.	-2.35E+05	2.35E+05	-2.35E+05	2.35E+05	-5.22E+03	5.21E+03
65.	824.	-3.67E+05	3.67E+05	-3.67E+05	3.67E+05	-5.65E+03	5.63E+03

Table N-509. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.64	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.82E+03	4.81E+03
15.	28.1	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.93E+03
30.	365.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.53E+03
45.	86.6	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.64E+03	-2.40E+05	2.40E+05	-2.40E+05	2.40E+05	-3.65E+03	3.73E+03

Table N-510. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.64	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.82E+03	4.81E+03
15.	28.1	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.93E+03
30.	365.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.53E+03
45.	86.6	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.64E+03	-2.40E+05	2.40E+05	-2.40E+05	2.40E+05	-3.65E+03	3.73E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-511. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-512. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.63E-03	-2.40E+04	2.40E+04	-2.38E+04	2.38E+04	-4.75E+03	4.75E+03
15.	-1.99E-03	-7.37E+04	7.37E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	4.52E-04	-1.68E+05	1.68E+05	-1.67E+05	1.67E+05	-5.57E+03	5.57E+03
45.	-0.722	-2.91E+05	2.91E+05	-2.90E+05	2.90E+05	-6.45E+03	6.45E+03
65.	-651.	-4.30E+05	4.27E+05	-4.30E+05	4.27E+05	-6.60E+03	6.58E+03

# TASK 1/ROLL MOTION/MODEL 5514

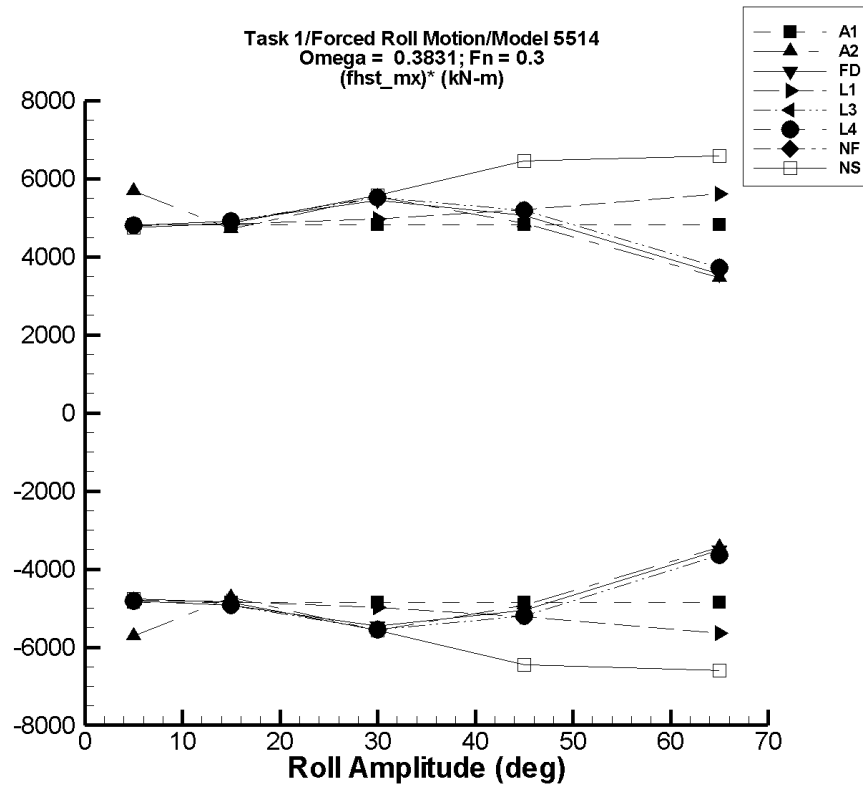


Figure N-65. Minimum and Maximum of  $(M_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-513. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.36E-03	-2.42E+04	2.42E+04	-2.43E+04	2.41E+04	-4.86E+03	4.83E+03
15.	-9.24E-03	-7.26E+04	7.26E+04	-7.28E+04	7.24E+04	-4.86E+03	4.83E+03
30.	-1.30E-02	-1.45E+05	1.45E+05	-1.46E+05	1.45E+05	-4.86E+03	4.83E+03
45.	-1.91E-02	-2.18E+05	2.18E+05	-2.19E+05	2.17E+05	-4.86E+03	4.83E+03
65.	-1.96E-02	-3.15E+05	3.15E+05	-3.16E+05	3.14E+05	-4.86E+03	4.83E+03

Table N-514. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-11.2	-2.85E+04	2.85E+04	-2.86E+04	2.84E+04	-5.71E+03	5.69E+03
15.	-110.	-7.09E+04	7.09E+04	-7.10E+04	7.07E+04	-4.73E+03	4.72E+03
30.	-41.7	-1.67E+05	1.67E+05	-1.67E+05	1.66E+05	-5.56E+03	5.54E+03
45.	-3.89E+03	-2.83E+05	2.25E+05	-2.26E+05	2.15E+05	-4.93E+03	4.86E+03
65.	-740.	-2.27E+05	2.27E+05	-2.24E+05	2.24E+05	-3.44E+03	3.47E+03

Table N-515. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.293	-2.41E+04	2.41E+04	-2.41E+04	2.40E+04	-4.81E+03	4.81E+03
15.	14.5	-7.41E+04	7.41E+04	-7.38E+04	7.38E+04	-4.92E+03	4.92E+03
30.	158.	-1.64E+05	1.64E+05	-1.64E+05	1.64E+05	-5.46E+03	5.45E+03
45.	-125.	-2.27E+05	2.27E+05	-2.27E+05	2.27E+05	-5.05E+03	5.05E+03
65.	-1.28E+03	-2.31E+05	2.31E+05	-2.29E+05	2.29E+05	-3.51E+03	3.55E+03

Table N-516. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.247	-2.40E+04	2.40E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	9.88	-7.27E+04	7.27E+04	-7.26E+04	7.26E+04	-4.84E+03	4.84E+03
30.	82.2	-1.50E+05	1.50E+05	-1.49E+05	1.49E+05	-4.98E+03	4.98E+03
45.	276.	-2.35E+05	2.35E+05	-2.34E+05	2.34E+05	-5.21E+03	5.20E+03
65.	801.	-3.67E+05	3.67E+05	-3.66E+05	3.66E+05	-5.64E+03	5.62E+03



Table N-517. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.54	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.81E+03	4.81E+03
15.	26.6	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.92E+03
30.	352.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.52E+03
45.	185.	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.44E+03	-2.40E+05	2.40E+05	-2.39E+05	2.39E+05	-3.64E+03	3.72E+03

Table N-518. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.54	-2.41E+04	2.41E+04	-2.41E+04	2.41E+04	-4.81E+03	4.81E+03
15.	26.6	-7.40E+04	7.40E+04	-7.39E+04	7.39E+04	-4.93E+03	4.92E+03
30.	352.	-1.66E+05	1.66E+05	-1.66E+05	1.66E+05	-5.55E+03	5.52E+03
45.	185.	-2.34E+05	2.34E+05	-2.34E+05	2.34E+05	-5.19E+03	5.19E+03
65.	-2.44E+03	-2.40E+05	2.40E+05	-2.39E+05	2.39E+05	-3.64E+03	3.72E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-519. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-520. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-4.64E-04	-2.40E+04	2.40E+04	-2.38E+04	2.38E+04	-4.75E+03	4.75E+03
15.	5.78E-03	-7.37E+04	7.37E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	-1.08E-03	-1.68E+05	1.68E+05	-1.67E+05	1.67E+05	-5.57E+03	5.57E+03
45.	0.993	-2.91E+05	2.91E+05	-2.90E+05	2.90E+05	-6.45E+03	6.45E+03
65.	-657.	-4.30E+05	4.27E+05	-4.30E+05	4.27E+05	-6.60E+03	6.58E+03

# TASK 1/ROLL MOTION/MODEL 5514

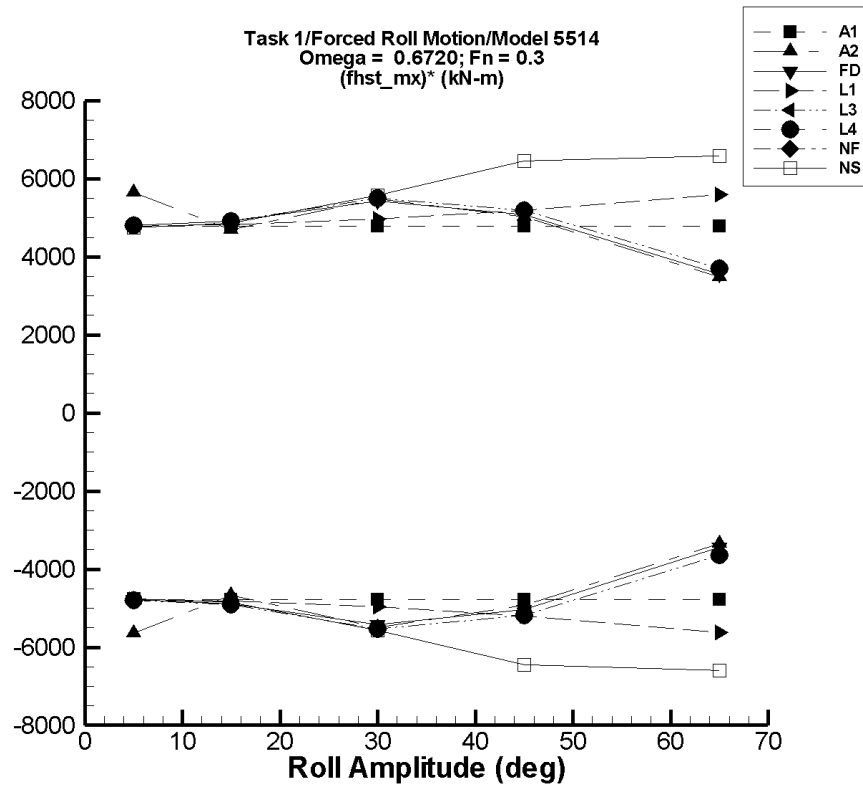


Figure N-66. Minimum and Maximum of  $(M_x^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-521. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.47E-02	-2.42E+04	2.42E+04	-2.39E+04	2.39E+04	-4.79E+03	4.79E+03
15.	6.91E-02	-7.26E+04	7.26E+04	-7.18E+04	7.18E+04	-4.79E+03	4.79E+03
30.	0.138	-1.45E+05	1.45E+05	-1.44E+05	1.44E+05	-4.79E+03	4.79E+03
45.	0.227	-2.18E+05	2.18E+05	-2.15E+05	2.15E+05	-4.79E+03	4.79E+03
65.	0.308	-3.15E+05	3.15E+05	-3.11E+05	3.11E+05	-4.79E+03	4.79E+03

Table N-522. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-20.7	-2.85E+04	2.85E+04	-2.82E+04	2.82E+04	-5.64E+03	5.65E+03
15.	-183.	-7.09E+04	7.09E+04	-7.01E+04	7.01E+04	-4.66E+03	4.69E+03
30.	76.7	-1.67E+05	1.67E+05	-1.65E+05	1.65E+05	-5.49E+03	5.49E+03
45.	-2.05E+03	-2.25E+05	2.25E+05	-2.24E+05	2.24E+05	-4.93E+03	5.03E+03
65.	-4.48E+03	-2.27E+05	2.27E+05	-2.22E+05	2.22E+05	-3.35E+03	3.49E+03

Table N-523. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.690	-2.41E+04	2.41E+04	-2.39E+04	2.40E+04	-4.77E+03	4.80E+03
15.	37.1	-7.41E+04	7.41E+04	-7.32E+04	7.37E+04	-4.88E+03	4.91E+03
30.	406.	-1.64E+05	1.64E+05	-1.62E+05	1.63E+05	-5.42E+03	5.43E+03
45.	-229.	-2.27E+05	2.27E+05	-2.27E+05	2.28E+05	-5.03E+03	5.08E+03
65.	-3.44E+03	-2.31E+05	2.31E+05	-2.27E+05	2.27E+05	-3.44E+03	3.55E+03

Table N-524. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.69E-02	-2.40E+04	2.40E+04	-2.39E+04	2.39E+04	-4.78E+03	4.78E+03
15.	9.48	-7.27E+04	7.27E+04	-7.24E+04	7.23E+04	-4.82E+03	4.82E+03
30.	83.1	-1.50E+05	1.50E+05	-1.49E+05	1.49E+05	-4.97E+03	4.96E+03
45.	280.	-2.35E+05	2.35E+05	-2.34E+05	2.34E+05	-5.20E+03	5.18E+03
65.	815.	-3.67E+05	3.67E+05	-3.65E+05	3.65E+05	-5.62E+03	5.60E+03

Table N-525. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.16	-2.41E+04	2.41E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	26.6	-7.40E+04	7.39E+04	-7.36E+04	7.36E+04	-4.91E+03	4.91E+03
30.	362.	-1.66E+05	1.66E+05	-1.65E+05	1.65E+05	-5.53E+03	5.50E+03
45.	-42.8	-2.34E+05	2.34E+05	-2.33E+05	2.33E+05	-5.18E+03	5.19E+03
65.	-2.66E+03	-2.40E+05	2.40E+05	-2.40E+05	2.38E+05	-3.65E+03	3.70E+03

Table N-526. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{hst}}$ Max. (kN-m)	Filtered $(M_x^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.16	-2.41E+04	2.41E+04	-2.40E+04	2.40E+04	-4.80E+03	4.80E+03
15.	26.6	-7.40E+04	7.39E+04	-7.36E+04	7.36E+04	-4.91E+03	4.91E+03
30.	362.	-1.66E+05	1.66E+05	-1.65E+05	1.65E+05	-5.53E+03	5.50E+03
45.	-42.8	-2.34E+05	2.34E+05	-2.33E+05	2.33E+05	-5.18E+03	5.19E+03
65.	-2.66E+03	-2.40E+05	2.40E+05	-2.40E+05	2.38E+05	-3.65E+03	3.70E+03

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Table N-527. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-528. Minimum and Maximum of  $M_x^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{hst}}$		Filtered $M_x^{\text{hst}}$		Filtered $(M_x^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.73E-03	-2.40E+04	2.40E+04	-2.38E+04	2.38E+04	-4.75E+03	4.75E+03
15.	5.54E-03	-7.37E+04	7.37E+04	-7.29E+04	7.29E+04	-4.86E+03	4.86E+03
30.	-2.46E-02	-1.68E+05	1.68E+05	-1.67E+05	1.67E+05	-5.57E+03	5.57E+03
45.	-0.385	-2.91E+05	2.91E+05	-2.90E+05	2.90E+05	-6.45E+03	6.45E+03
65.	-643.	-4.30E+05	4.27E+05	-4.30E+05	4.27E+05	-6.60E+03	6.58E+03

# TASK 1/ROLL MOTION/MODEL 5514

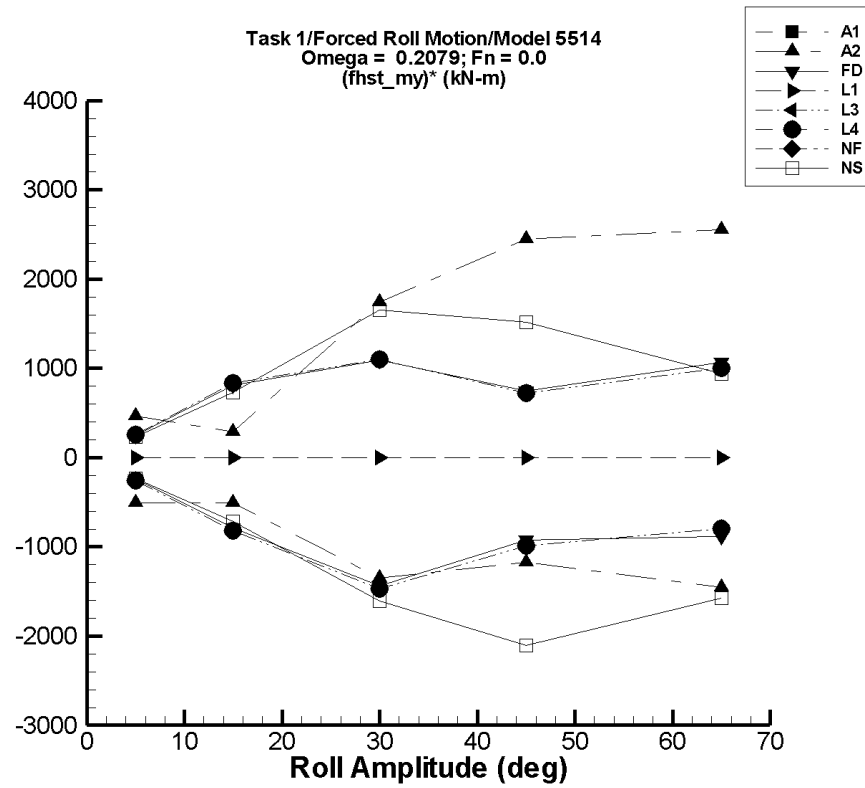


Figure N-67. Minimum and Maximum of  $(M_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.



Table N-529. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
	<b>Mean (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m/°)</b>	<b>Max. (kN-m/°)</b>
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-530. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
	<b>Mean (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m/°)</b>	<b>Max. (kN-m/°)</b>
5.	3.26E+03	724.	5.59E+03	711.	5.58E+03	-509.	464.
15.	8.28E+03	724.	1.27E+04	706.	1.26E+04	-505.	289.
30.	4.11E+04	-2.84E+05	9.66E+04	612.	9.33E+04	-1.35E+03	1.74E+03
45.	5.33E+04	-5.97E+05	7.43E+05	731.	1.64E+05	-1.17E+03	2.45E+03
65.	1.17E+04	-8.33E+04	6.35E+05	-8.28E+04	1.77E+05	-1.45E+03	2.55E+03

Table N-531. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.81E+04	1.69E+04	1.94E+04	1.69E+04	1.94E+04	-241.	252.
15.	2.87E+04	1.69E+04	4.09E+04	1.69E+04	4.08E+04	-790.	808.
30.	6.01E+04	1.69E+04	9.27E+04	1.68E+04	9.28E+04	-1.44E+03	1.09E+03
45.	5.86E+04	1.69E+04	9.30E+04	1.71E+04	9.22E+04	-923.	747.
65.	2.14E+04	-3.63E+04	9.30E+04	-3.62E+04	9.05E+04	-886.	1.06E+03

Table N-532. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.69E-07	-4.71E-03	4.71E-03	-4.71E-03	4.71E-03	-9.42E-04	9.42E-04
15.	-7.33E-06	-1.37E-02	1.37E-02	-1.37E-02	1.37E-02	-9.13E-04	9.14E-04
30.	-5.74E-05	-2.46E-02	2.46E-02	-2.46E-02	2.46E-02	-8.17E-04	8.21E-04
45.	-1.87E-04	-3.01E-02	3.01E-02	-3.01E-02	3.01E-02	-6.65E-04	6.73E-04
65.	-5.28E-04	-3.04E-02	3.04E-02	-3.04E-02	3.04E-02	-4.59E-04	4.76E-04

Table N-533. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	758.	3.32E+03	-254.	258.
15.	1.30E+04	758.	2.55E+04	780.	2.55E+04	-816.	831.
30.	4.48E+04	763.	7.77E+04	819.	7.77E+04	-1.47E+03	1.10E+03
45.	4.52E+04	758.	7.81E+04	903.	7.78E+04	-985.	723.
65.	1.22E+04	-3.94E+04	7.81E+04	-3.93E+04	7.72E+04	-792.	1.00E+03

Table N-534. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	758.	3.32E+03	-254.	258.
15.	1.30E+04	758.	2.55E+04	780.	2.55E+04	-816.	831.
30.	4.48E+04	763.	7.77E+04	819.	7.77E+04	-1.47E+03	1.10E+03
45.	4.52E+04	758.	7.81E+04	903.	7.78E+04	-985.	723.
65.	1.22E+04	-3.94E+04	7.81E+04	-3.93E+04	7.72E+04	-792.	1.00E+03

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Table N-535. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-536. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.18E+03	-25.9	2.36E+03	5.85	2.32E+03	-234.	229.
15.	1.10E+04	-0.124	2.24E+04	211.	2.19E+04	-717.	728.
30.	4.85E+04	-0.377	9.89E+04	293.	9.82E+04	-1.61E+03	1.66E+03
45.	9.49E+04	-0.522	1.63E+05	291.	1.63E+05	-2.10E+03	1.51E+03
65.	1.03E+05	-18.2	1.65E+05	288.	1.64E+05	-1.58E+03	941.

# TASK 1/ROLL MOTION/MODEL 5514

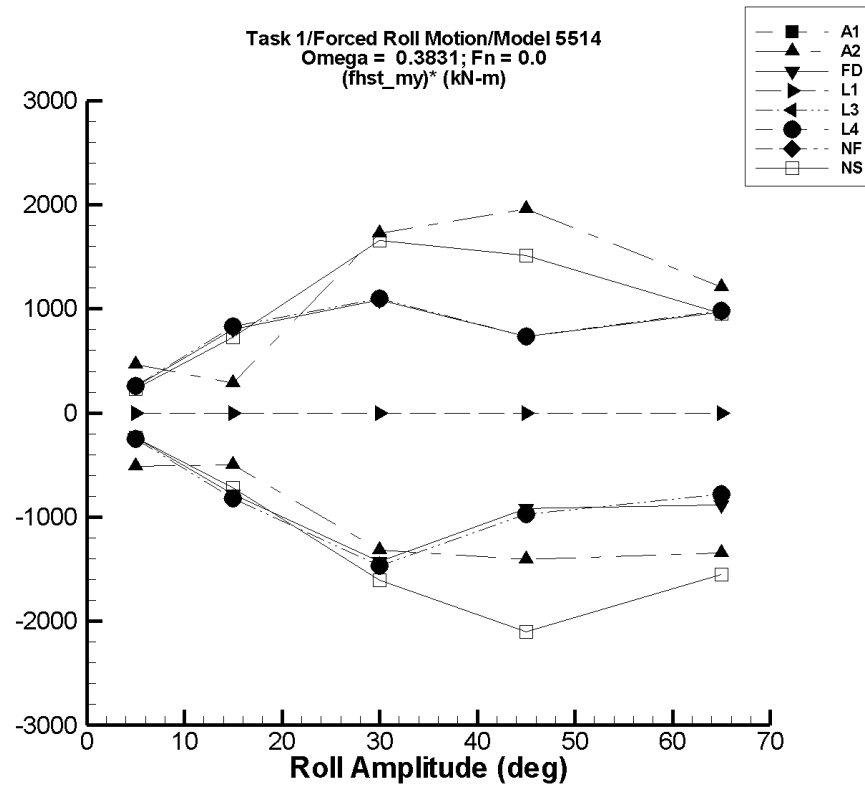


Figure N-68. Minimum and Maximum of  $(M_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

TASK 1/ROLL MOTION/MODEL 5514

Table N-537. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-538. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	703.	5.58E+03	-511.	464.
15.	8.28E+03	725.	1.26E+04	823.	1.26E+04	-497.	285.
30.	4.05E+04	-2.84E+05	9.58E+04	1.08E+03	9.23E+04	-1.31E+03	1.73E+03
45.	6.21E+04	-5.97E+05	7.43E+05	-1.11E+03	1.50E+05	-1.41E+03	1.96E+03
65.	5.62E+03	-8.33E+04	9.87E+04	-8.17E+04	8.42E+04	-1.34E+03	1.21E+03

Table N-539. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.81E+04	1.69E+04	1.94E+04	1.69E+04	1.93E+04	-238.	249.
15.	2.87E+04	1.69E+04	4.09E+04	1.70E+04	4.07E+04	-781.	800.
30.	6.02E+04	1.69E+04	9.27E+04	1.73E+04	9.27E+04	-1.43E+03	1.08E+03
45.	5.91E+04	1.69E+04	9.30E+04	1.80E+04	9.23E+04	-915.	737.
65.	2.16E+04	-3.63E+04	9.30E+04	-3.59E+04	8.46E+04	-883.	970.

Table N-540. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.93E-07	-4.71E-03	4.71E-03	-4.71E-03	4.71E-03	-9.41E-04	9.41E-04
15.	-7.24E-06	-1.37E-02	1.37E-02	-1.37E-02	1.37E-02	-9.12E-04	9.13E-04
30.	-5.61E-05	-2.46E-02	2.46E-02	-2.46E-02	2.46E-02	-8.17E-04	8.20E-04
45.	-1.83E-04	-3.01E-02	3.01E-02	-3.01E-02	3.01E-02	-6.65E-04	6.73E-04
65.	-5.16E-04	-3.04E-02	3.04E-02	-3.03E-02	3.03E-02	-4.59E-04	4.75E-04

Table N-541. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	764.	3.31E+03	-253.	256.
15.	1.30E+04	758.	2.55E+04	751.	2.54E+04	-818.	827.
30.	4.47E+04	757.	7.77E+04	695.	7.77E+04	-1.47E+03	1.10E+03
45.	4.46E+04	757.	7.81E+04	745.	7.76E+04	-974.	735.
65.	1.14E+04	-3.94E+04	7.81E+04	-3.92E+04	7.51E+04	-779.	980.

Table N-542. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	764.	3.31E+03	-253.	256.
15.	1.30E+04	758.	2.55E+04	751.	2.54E+04	-818.	827.
30.	4.47E+04	757.	7.77E+04	695.	7.77E+04	-1.47E+03	1.10E+03
45.	4.46E+04	757.	7.81E+04	745.	7.76E+04	-974.	735.
65.	1.14E+04	-3.94E+04	7.81E+04	-3.92E+04	7.51E+04	-779.	980.



TASK 1/ROLL MOTION/MODEL 5514

Table N-543. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-544. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.18E+03	-25.9	2.36E+03	5.86	2.32E+03	-234.	229.
15.	1.10E+04	-3.68E-02	2.24E+04	211.	2.19E+04	-717.	728.
30.	4.85E+04	-0.112	9.89E+04	293.	9.82E+04	-1.61E+03	1.66E+03
45.	9.49E+04	-0.245	1.63E+05	291.	1.63E+05	-2.10E+03	1.51E+03
65.	1.01E+05	-23.4	1.64E+05	215.	1.63E+05	-1.55E+03	957.

# TASK 1/ROLL MOTION/MODEL 5514

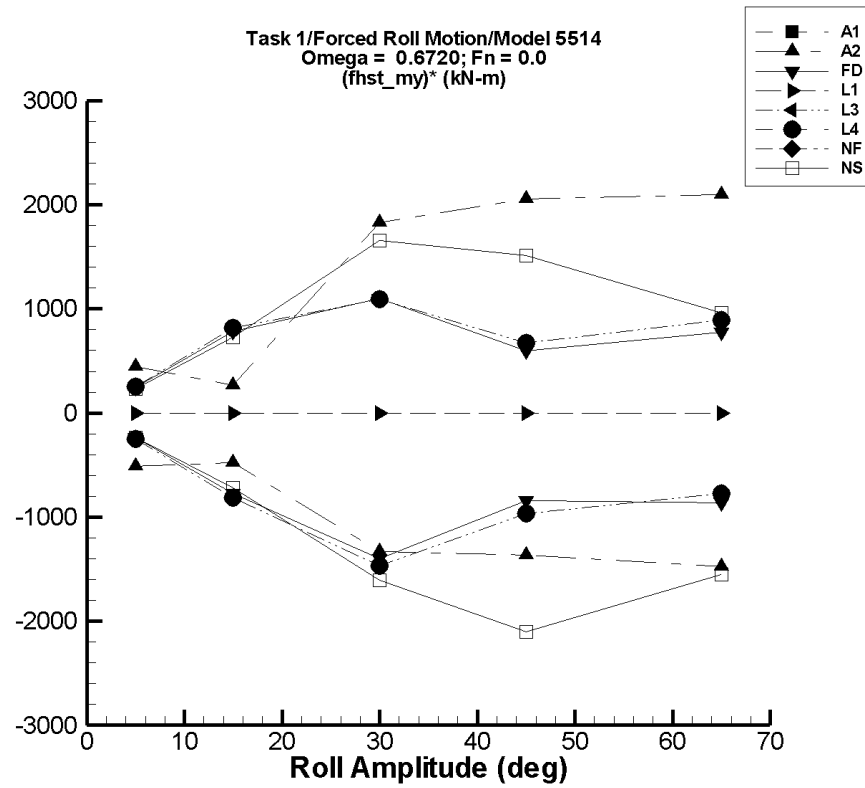


Figure N-69. Minimum and Maximum of  $(M_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

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Table N-545. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-546. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	716.	5.49E+03	-509.	446.
15.	8.29E+03	725.	1.26E+04	1.17E+03	1.23E+04	-474.	265.
30.	3.88E+04	-2.84E+05	9.65E+04	-1.09E+03	9.36E+04	-1.33E+03	1.83E+03
45.	6.23E+04	726.	6.35E+05	926.	1.55E+05	-1.36E+03	2.05E+03
65.	1.38E+04	-8.32E+04	7.43E+05	-8.20E+04	1.50E+05	-1.47E+03	2.10E+03

Table N-547. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.81E+04	1.69E+04	1.94E+04	1.69E+04	1.93E+04	-236.	244.
15.	2.87E+04	1.69E+04	4.09E+04	1.71E+04	4.05E+04	-773.	785.
30.	5.99E+04	1.69E+04	9.27E+04	1.80E+04	9.29E+04	-1.40E+03	1.10E+03
45.	5.79E+04	1.69E+04	9.30E+04	2.01E+04	8.48E+04	-840.	598.
65.	2.12E+04	-3.63E+04	9.30E+04	-3.51E+04	7.15E+04	-866.	775.

Table N-548. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.60E-07	-4.71E-03	4.71E-03	-4.69E-03	4.69E-03	-9.39E-04	9.39E-04
15.	-7.60E-06	-1.37E-02	1.37E-02	-1.37E-02	1.37E-02	-9.10E-04	9.11E-04
30.	-5.79E-05	-2.46E-02	2.46E-02	-2.45E-02	2.45E-02	-8.15E-04	8.19E-04
45.	-1.88E-04	-3.01E-02	3.01E-02	-3.01E-02	3.01E-02	-6.64E-04	6.73E-04
65.	-5.26E-04	-3.04E-02	3.04E-02	-3.02E-02	3.02E-02	-4.56E-04	4.72E-04

Table N-549. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	758.	3.32E+03	773.	3.30E+03	-251.	254.
15.	1.30E+04	757.	2.55E+04	767.	2.53E+04	-817.	818.
30.	4.48E+04	757.	7.77E+04	785.	7.77E+04	-1.47E+03	1.09E+03
45.	4.49E+04	758.	7.81E+04	1.36E+03	7.52E+04	-968.	672.
65.	1.14E+04	-3.93E+04	7.81E+04	-3.89E+04	6.91E+04	-773.	889.

Table N-550. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	758.	3.32E+03	773.	3.30E+03	-251.	254.
15.	1.30E+04	757.	2.55E+04	767.	2.53E+04	-817.	818.
30.	4.48E+04	757.	7.77E+04	785.	7.77E+04	-1.47E+03	1.09E+03
45.	4.49E+04	758.	7.81E+04	1.36E+03	7.52E+04	-968.	672.
65.	1.14E+04	-3.93E+04	7.81E+04	-3.89E+04	6.91E+04	-773.	889.

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Table N-551. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-552. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.18E+03	-25.9	2.36E+03	5.89	2.32E+03	-234.	229.
15.	1.10E+04	-0.114	2.24E+04	211.	2.19E+04	-717.	728.
30.	4.85E+04	-0.191	9.89E+04	293.	9.82E+04	-1.61E+03	1.66E+03
45.	9.49E+04	-0.296	1.63E+05	291.	1.63E+05	-2.10E+03	1.51E+03
65.	1.01E+05	-23.3	1.64E+05	216.	1.63E+05	-1.55E+03	959.

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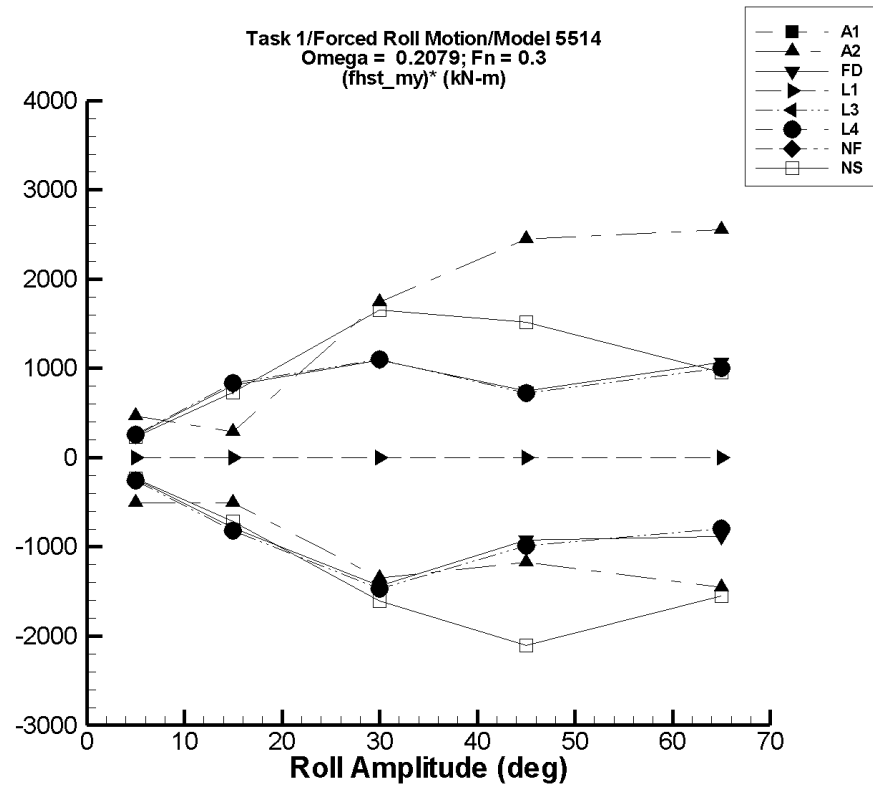


Figure N-70. Minimum and Maximum of  $(M_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

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Table N-553. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-554. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	711.	5.58E+03	-509.	464.
15.	8.28E+03	724.	1.27E+04	706.	1.26E+04	-505.	289.
30.	4.11E+04	-2.84E+05	9.66E+04	612.	9.33E+04	-1.35E+03	1.74E+03
45.	5.33E+04	-5.97E+05	7.43E+05	731.	1.64E+05	-1.17E+03	2.45E+03
65.	1.17E+04	-8.33E+04	6.35E+05	-8.28E+04	1.77E+05	-1.45E+03	2.55E+03



Table N-555. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.81E+04	1.69E+04	1.94E+04	1.69E+04	1.94E+04	-241.	252.
15.	2.87E+04	1.69E+04	4.09E+04	1.69E+04	4.08E+04	-790.	808.
30.	6.01E+04	1.69E+04	9.27E+04	1.68E+04	9.28E+04	-1.44E+03	1.09E+03
45.	5.86E+04	1.69E+04	9.30E+04	1.71E+04	9.22E+04	-923.	747.
65.	2.14E+04	-3.63E+04	9.30E+04	-3.62E+04	9.05E+04	-886.	1.06E+03

Table N-556. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.69E-07	-4.71E-03	4.71E-03	-4.71E-03	4.71E-03	-9.42E-04	9.42E-04
15.	-7.33E-06	-1.37E-02	1.37E-02	-1.37E-02	1.37E-02	-9.13E-04	9.14E-04
30.	-5.74E-05	-2.46E-02	2.46E-02	-2.46E-02	2.46E-02	-8.17E-04	8.21E-04
45.	-1.87E-04	-3.01E-02	3.01E-02	-3.01E-02	3.01E-02	-6.65E-04	6.73E-04
65.	-5.28E-04	-3.04E-02	3.04E-02	-3.04E-02	3.04E-02	-4.59E-04	4.76E-04

Table N-557. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	759.	3.32E+03	-254.	258.
15.	1.30E+04	759.	2.55E+04	780.	2.55E+04	-816.	831.
30.	4.48E+04	763.	7.77E+04	819.	7.77E+04	-1.47E+03	1.10E+03
45.	4.52E+04	758.	7.81E+04	903.	7.78E+04	-985.	723.
65.	1.22E+04	-3.94E+04	7.81E+04	-3.93E+04	7.72E+04	-792.	1.00E+03

Table N-558. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	759.	3.32E+03	-254.	258.
15.	1.30E+04	759.	2.55E+04	780.	2.55E+04	-816.	831.
30.	4.48E+04	763.	7.77E+04	819.	7.77E+04	-1.47E+03	1.10E+03
45.	4.52E+04	758.	7.81E+04	903.	7.78E+04	-985.	723.
65.	1.22E+04	-3.94E+04	7.81E+04	-3.93E+04	7.72E+04	-792.	1.00E+03

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Table N-559. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-560. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.18E+03	-25.9	2.36E+03	5.85	2.32E+03	-234.	229.
15.	1.10E+04	-0.124	2.24E+04	211.	2.19E+04	-717.	728.
30.	4.85E+04	-0.377	9.89E+04	293.	9.82E+04	-1.61E+03	1.66E+03
45.	9.49E+04	-0.522	1.63E+05	291.	1.63E+05	-2.10E+03	1.51E+03
65.	1.01E+05	-23.3	1.64E+05	216.	1.63E+05	-1.55E+03	957.

# TASK 1/ROLL MOTION/MODEL 5514

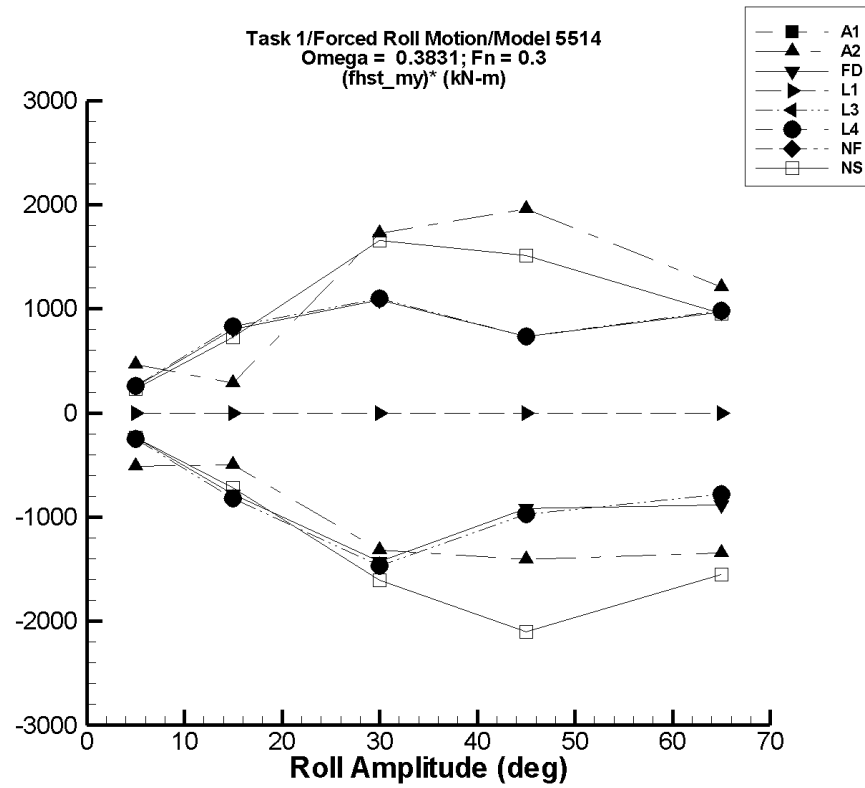


Figure N-71. Minimum and Maximum of  $(M_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-561. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-562. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	703.	5.58E+03	-511.	464.
15.	8.28E+03	725.	1.26E+04	823.	1.26E+04	-497.	285.
30.	4.05E+04	-2.84E+05	9.58E+04	1.08E+03	9.23E+04	-1.31E+03	1.73E+03
45.	6.21E+04	-5.97E+05	7.43E+05	-1.11E+03	1.50E+05	-1.41E+03	1.96E+03
65.	5.62E+03	-8.33E+04	9.87E+04	-8.17E+04	8.42E+04	-1.34E+03	1.21E+03

Table N-563. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.81E+04	1.69E+04	1.94E+04	1.69E+04	1.93E+04	-238.	249.
15.	2.87E+04	1.69E+04	4.09E+04	1.70E+04	4.07E+04	-781.	800.
30.	6.02E+04	1.69E+04	9.27E+04	1.73E+04	9.27E+04	-1.43E+03	1.08E+03
45.	5.91E+04	1.69E+04	9.30E+04	1.80E+04	9.23E+04	-915.	737.
65.	2.16E+04	-3.63E+04	9.30E+04	-3.59E+04	8.46E+04	-883.	970.

Table N-564. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.93E-07	-4.71E-03	4.71E-03	-4.71E-03	4.71E-03	-9.41E-04	9.41E-04
15.	-7.24E-06	-1.37E-02	1.37E-02	-1.37E-02	1.37E-02	-9.12E-04	9.13E-04
30.	-5.61E-05	-2.46E-02	2.46E-02	-2.46E-02	2.46E-02	-8.17E-04	8.20E-04
45.	-1.83E-04	-3.01E-02	3.01E-02	-3.01E-02	3.01E-02	-6.65E-04	6.73E-04
65.	-5.16E-04	-3.04E-02	3.04E-02	-3.03E-02	3.03E-02	-4.59E-04	4.75E-04

Table N-565. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	764.	3.31E+03	-253.	256.
15.	1.30E+04	757.	2.55E+04	752.	2.54E+04	-818.	827.
30.	4.47E+04	758.	7.77E+04	696.	7.77E+04	-1.47E+03	1.10E+03
45.	4.46E+04	759.	7.81E+04	745.	7.76E+04	-974.	735.
65.	1.14E+04	-3.94E+04	7.81E+04	-3.92E+04	7.51E+04	-779.	980.

Table N-566. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	756.	3.32E+03	764.	3.31E+03	-253.	256.
15.	1.30E+04	757.	2.55E+04	752.	2.54E+04	-818.	827.
30.	4.47E+04	758.	7.77E+04	696.	7.77E+04	-1.47E+03	1.10E+03
45.	4.46E+04	759.	7.81E+04	745.	7.76E+04	-974.	735.
65.	1.14E+04	-3.94E+04	7.81E+04	-3.92E+04	7.51E+04	-779.	980.

# TASK 1/ROLL MOTION/MODEL 5514

Table N-567. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-568. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.18E+03	-25.9	2.36E+03	5.86	2.32E+03	-234.	229.
15.	1.10E+04	-3.68E-02	2.24E+04	211.	2.19E+04	-717.	728.
30.	4.85E+04	-0.112	9.89E+04	293.	9.82E+04	-1.61E+03	1.66E+03
45.	9.49E+04	-0.245	1.63E+05	291.	1.63E+05	-2.10E+03	1.51E+03
65.	1.01E+05	-23.4	1.64E+05	215.	1.63E+05	-1.55E+03	957.



# TASK 1/ROLL MOTION/MODEL 5514

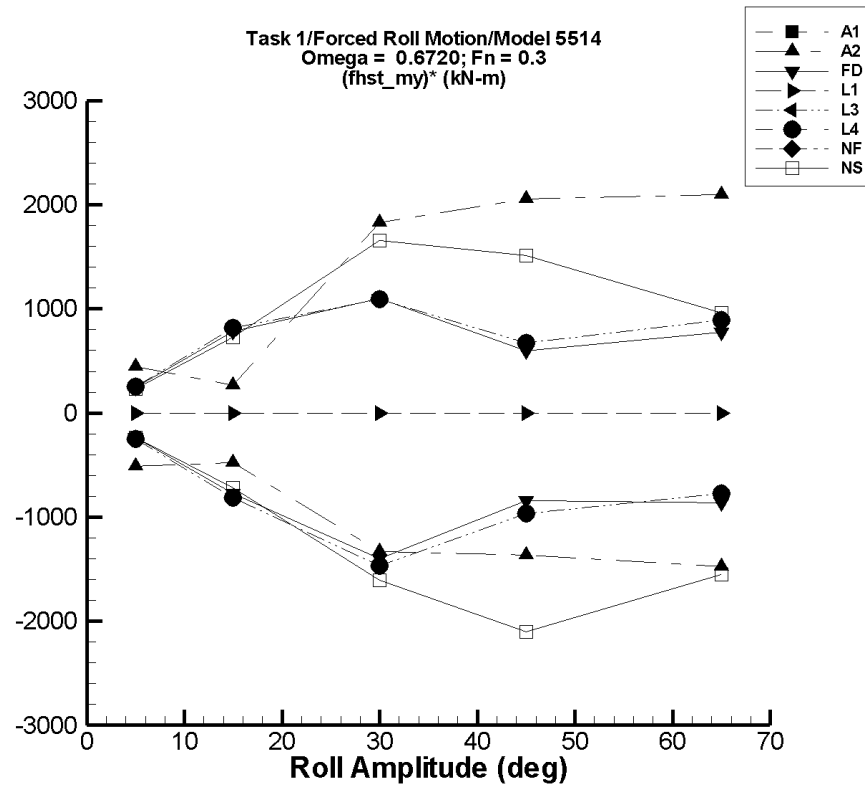


Figure N-72. Minimum and Maximum of  $(M_y^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

TASK 1/ROLL MOTION/MODEL 5514

Table N-569. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-570. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.26E+03	724.	5.59E+03	716.	5.49E+03	-509.	446.
15.	8.29E+03	725.	1.26E+04	1.17E+03	1.23E+04	-474.	265.
30.	3.88E+04	-2.84E+05	9.65E+04	-1.09E+03	9.36E+04	-1.33E+03	1.83E+03
45.	6.23E+04	726.	6.35E+05	926.	1.55E+05	-1.36E+03	2.05E+03
65.	1.38E+04	-8.32E+04	7.43E+05	-8.20E+04	1.50E+05	-1.47E+03	2.10E+03

Table N-571. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.81E+04	1.69E+04	1.94E+04	1.69E+04	1.93E+04	-236.	244.
15.	2.87E+04	1.69E+04	4.09E+04	1.71E+04	4.05E+04	-773.	785.
30.	5.99E+04	1.69E+04	9.27E+04	1.80E+04	9.29E+04	-1.40E+03	1.10E+03
45.	5.79E+04	1.69E+04	9.30E+04	2.01E+04	8.48E+04	-840.	598.
65.	2.12E+04	-3.63E+04	9.30E+04	-3.51E+04	7.15E+04	-866.	775.

Table N-572. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.60E-07	-4.71E-03	4.71E-03	-4.69E-03	4.69E-03	-9.39E-04	9.39E-04
15.	-7.60E-06	-1.37E-02	1.37E-02	-1.37E-02	1.37E-02	-9.10E-04	9.11E-04
30.	-5.79E-05	-2.46E-02	2.46E-02	-2.45E-02	2.45E-02	-8.15E-04	8.19E-04
45.	-1.88E-04	-3.01E-02	3.01E-02	-3.01E-02	3.01E-02	-6.64E-04	6.73E-04
65.	-5.26E-04	-3.04E-02	3.04E-02	-3.02E-02	3.02E-02	-4.56E-04	4.72E-04

Table N-573. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	759.	3.32E+03	773.	3.30E+03	-251.	254.
15.	1.30E+04	756.	2.55E+04	767.	2.53E+04	-817.	818.
30.	4.48E+04	757.	7.77E+04	785.	7.77E+04	-1.47E+03	1.09E+03
45.	4.49E+04	758.	7.81E+04	1.36E+03	7.52E+04	-968.	672.
65.	1.14E+04	-3.93E+04	7.81E+04	-3.89E+04	6.91E+04	-773.	889.

Table N-574. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>M_y^{\text{hst}}</math></b>		<b>Filtered <math>(M_y^{\text{hst}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	2.03E+03	759.	3.32E+03	773.	3.30E+03	-251.	254.
15.	1.30E+04	756.	2.55E+04	767.	2.53E+04	-817.	818.
30.	4.48E+04	757.	7.77E+04	785.	7.77E+04	-1.47E+03	1.09E+03
45.	4.49E+04	758.	7.81E+04	1.36E+03	7.52E+04	-968.	672.
65.	1.14E+04	-3.93E+04	7.81E+04	-3.89E+04	6.91E+04	-773.	889.

TASK 1/ROLL MOTION/MODEL 5514

Table N-575. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-576. Minimum and Maximum of  $M_y^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{hst}} \rangle$	Unfiltered $M_y^{\text{hst}}$		Filtered $M_y^{\text{hst}}$		Filtered $(M_y^{\text{hst}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.18E+03	-25.9	2.36E+03	5.89	2.32E+03	-234.	229.
15.	1.10E+04	-0.114	2.24E+04	211.	2.19E+04	-717.	728.
30.	4.85E+04	-0.191	9.89E+04	293.	9.82E+04	-1.61E+03	1.66E+03
45.	9.49E+04	-0.296	1.63E+05	291.	1.63E+05	-2.10E+03	1.51E+03
65.	1.01E+05	-23.3	1.64E+05	216.	1.63E+05	-1.55E+03	959.

# TASK 1/ROLL MOTION/MODEL 5514

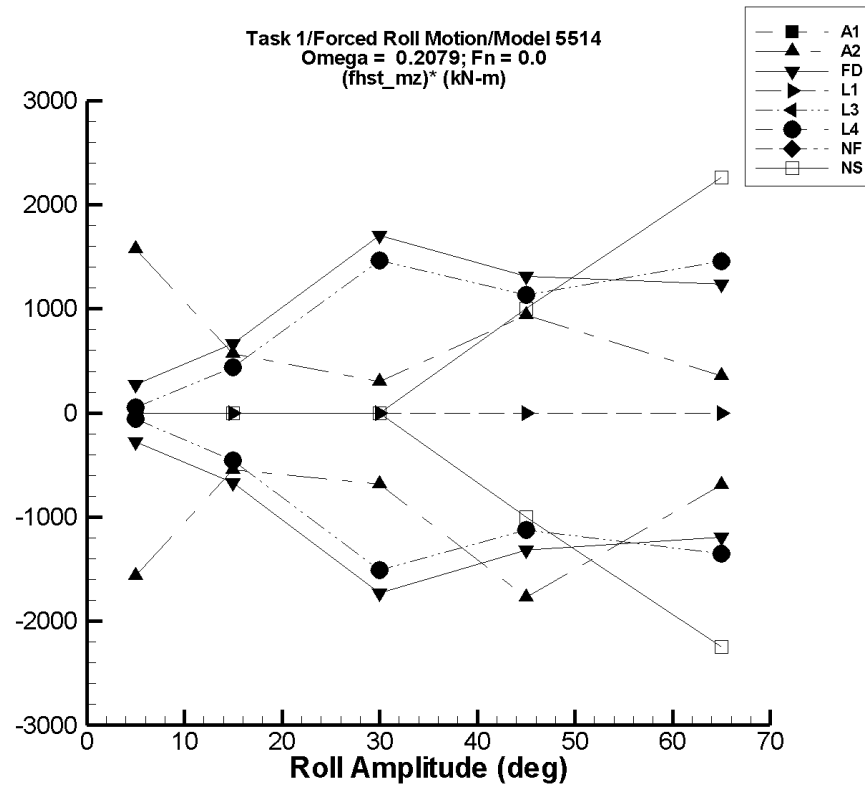


Figure N-73. Minimum and Maximum of  $(M_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

TASK 1/ROLL MOTION/MODEL 5514

Table N-577. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-578. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-24.0	-7.84E+03	7.84E+03	-7.85E+03	7.83E+03	-1.56E+03	1.57E+03
15.	-170.	-8.35E+03	8.35E+03	-8.34E+03	8.34E+03	-545.	567.
30.	-607.	-1.09E+05	9.23E+03	-2.11E+04	8.35E+03	-682.	299.
45.	-2.95E+03	-4.41E+05	3.10E+05	-8.27E+04	3.95E+04	-1.77E+03	943.
65.	-2.85E+03	-2.85E+05	1.75E+05	-4.75E+04	2.01E+04	-688.	353.

Table N-579. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	5.82E-02	-1.38E+03	1.38E+03	-1.38E+03	1.38E+03	-275.	275.
15.	48.1	-1.01E+04	1.01E+04	-1.00E+04	1.00E+04	-672.	666.
30.	328.	-5.16E+04	5.16E+04	-5.15E+04	5.15E+04	-1.73E+03	1.71E+03
45.	74.9	-5.95E+04	5.95E+04	-5.92E+04	5.92E+04	-1.32E+03	1.31E+03
65.	-1.35E+03	-7.96E+04	7.96E+04	-7.91E+04	7.91E+04	-1.20E+03	1.24E+03

Table N-580. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	2.06E-04	4.35E-10	4.12E-04	2.60E-07	4.12E-04	-4.12E-05	4.12E-05
15.	1.84E-03	3.91E-09	3.67E-03	2.34E-06	3.67E-03	-1.23E-04	1.22E-04
30.	7.18E-03	1.56E-08	1.42E-02	9.36E-06	1.42E-02	-2.39E-04	2.33E-04
45.	1.55E-02	3.52E-08	3.01E-02	2.11E-05	3.01E-02	-3.43E-04	3.25E-04
65.	2.96E-02	7.37E-08	5.57E-02	4.42E-05	5.57E-02	-4.55E-04	4.02E-04



Table N-581. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.98	-286.	286.	-279.	279.	-56.7	54.9
15.	102.	-6.72E+03	6.72E+03	-6.71E+03	6.71E+03	-454.	441.
30.	660.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.51E+03	1.46E+03
45.	-114.	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.13E+03	1.13E+03
65.	-3.34E+03	-9.15E+04	9.15E+04	-9.13E+04	9.13E+04	-1.35E+03	1.46E+03

Table N-582. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.98	-286.	286.	-279.	279.	-56.7	54.9
15.	102.	-6.72E+03	6.72E+03	-6.71E+03	6.71E+03	-454.	441.
30.	660.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.51E+03	1.46E+03
45.	-114.	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.13E+03	1.13E+03
65.	-3.34E+03	-9.15E+04	9.15E+04	-9.13E+04	9.13E+04	-1.35E+03	1.46E+03

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Table N-583. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-584. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.17E-04	-7.01E-02	7.20E-02	-2.57E-02	2.18E-02	-5.07E-03	4.42E-03
15.	2.07E-04	-6.88E-02	8.35E-02	-2.71E-02	3.00E-02	-1.82E-03	1.99E-03
30.	-8.48E-04	-0.136	9.53E-02	-2.55E-02	3.78E-02	-8.23E-04	1.29E-03
45.	-0.694	-4.56E+04	4.55E+04	-4.52E+04	4.52E+04	-1.00E+03	1.00E+03
65.	663.	-1.45E+05	1.48E+05	-1.45E+05	1.48E+05	-2.25E+03	2.26E+03

# TASK 1/ROLL MOTION/MODEL 5514

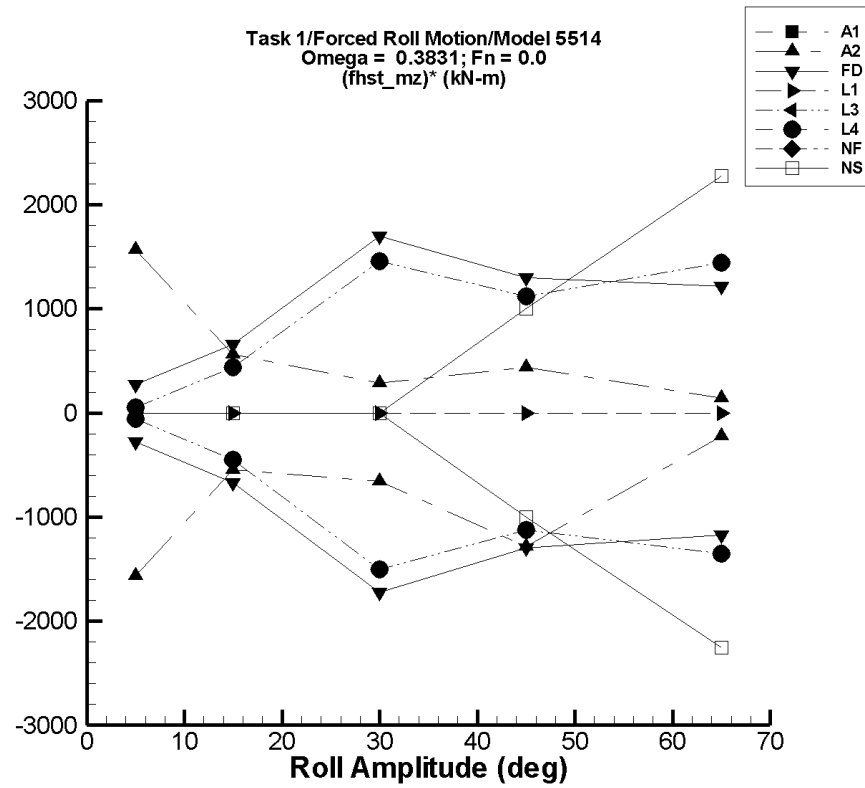


Figure N-74. Minimum and Maximum of  $(M_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

TASK 1/ROLL MOTION/MODEL 5514

Table N-585. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-586. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-22.5	-7.84E+03	7.84E+03	-7.86E+03	7.82E+03	-1.57E+03	1.57E+03
15.	-155.	-8.34E+03	8.35E+03	-8.30E+03	8.30E+03	-543.	564.
30.	-857.	-1.09E+05	9.75E+03	-2.05E+04	7.83E+03	-656.	290.
45.	-1.65E+03	-4.41E+05	1.73E+05	-5.95E+04	1.81E+04	-1.29E+03	440.
65.	-2.25E+03	-1.69E+04	9.79E+03	-1.67E+04	7.16E+03	-223.	145.

Table N-587. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.534	-1.38E+03	1.38E+03	-1.37E+03	1.37E+03	-274.	274.
15.	48.7	-1.01E+04	1.01E+04	-9.97E+03	9.97E+03	-668.	662.
30.	306.	-5.16E+04	5.16E+04	-5.13E+04	5.13E+04	-1.72E+03	1.70E+03
45.	-149.	-5.95E+04	5.95E+04	-5.84E+04	5.84E+04	-1.29E+03	1.30E+03
65.	-1.49E+03	-7.96E+04	7.96E+04	-7.77E+04	7.77E+04	-1.17E+03	1.22E+03

Table N-588. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.06E-04	3.27E-09	4.12E-04	-2.35E-07	4.11E-04	-4.13E-05	4.10E-05
15.	1.84E-03	2.93E-08	3.67E-03	-2.08E-06	3.66E-03	-1.23E-04	1.21E-04
30.	7.18E-03	1.17E-07	1.42E-02	-7.88E-06	1.42E-02	-2.40E-04	2.33E-04
45.	1.55E-02	2.65E-07	3.01E-02	-1.60E-05	3.00E-02	-3.44E-04	3.24E-04
65.	2.96E-02	5.53E-07	5.57E-02	-2.67E-05	5.56E-02	-4.55E-04	4.01E-04

Table N-589. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.35	-284.	286.	-272.	275.	-55.4	54.2
15.	98.2	-6.72E+03	6.72E+03	-6.69E+03	6.69E+03	-453.	440.
30.	665.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.50E+03	1.46E+03
45.	12.7	-5.10E+04	5.10E+04	-5.04E+04	5.05E+04	-1.12E+03	1.12E+03
65.	-3.09E+03	-9.14E+04	9.14E+04	-9.08E+04	9.07E+04	-1.35E+03	1.44E+03

Table N-590. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.35	-284.	286.	-272.	275.	-55.4	54.2
15.	98.2	-6.72E+03	6.72E+03	-6.69E+03	6.69E+03	-453.	440.
30.	665.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.50E+03	1.46E+03
45.	12.7	-5.10E+04	5.10E+04	-5.04E+04	5.05E+04	-1.12E+03	1.12E+03
65.	-3.09E+03	-9.14E+04	9.14E+04	-9.08E+04	9.07E+04	-1.35E+03	1.44E+03

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Table N-591. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-592. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-7.88E-04	-7.12E-02	8.43E-02	-3.12E-02	1.69E-02	-6.09E-03	3.53E-03
15.	1.28E-04	-7.90E-02	8.66E-02	-2.72E-02	2.51E-02	-1.82E-03	1.66E-03
30.	1.25E-03	-8.72E-02	8.83E-02	-4.18E-02	3.34E-02	-1.44E-03	1.07E-03
45.	0.918	-4.55E+04	4.55E+04	-4.52E+04	4.52E+04	-1.00E+03	1.00E+03
65.	668.	-1.46E+05	1.49E+05	-1.46E+05	1.48E+05	-2.25E+03	2.27E+03

# TASK 1/ROLL MOTION/MODEL 5514

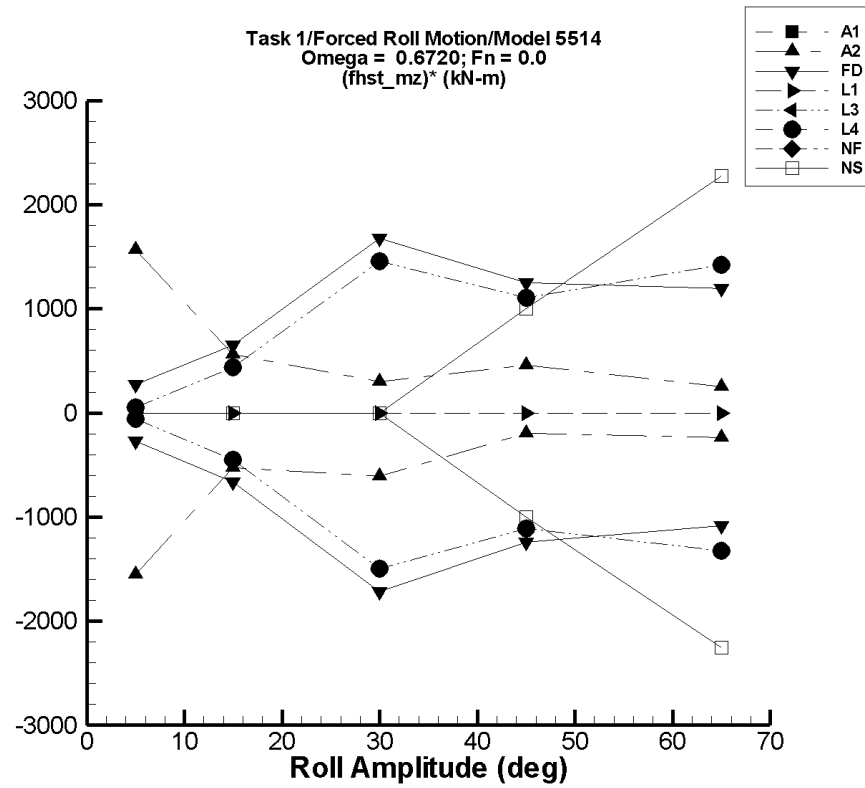


Figure N-75. Minimum and Maximum of  $(M_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.



TASK 1/ROLL MOTION/MODEL 5514

Table N-593. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-594. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-42.7	-7.83E+03	7.83E+03	-7.79E+03	7.79E+03	-1.55E+03	1.57E+03
15.	-289.	-8.35E+03	8.35E+03	-8.15E+03	8.15E+03	-524.	563.
30.	-1.40E+03	-1.09E+05	8.41E+03	-1.97E+04	7.70E+03	-610.	304.
45.	2.11E+03	-8.39E+03	1.79E+05	-6.71E+03	2.27E+04	-196.	457.
65.	-931.	-1.68E+04	1.15E+05	-1.65E+04	1.54E+04	-239.	251.

Table N-595. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.549	-1.38E+03	1.38E+03	-1.36E+03	1.37E+03	-272.	273.
15.	126.	-1.01E+04	1.01E+04	-9.78E+03	9.86E+03	-661.	649.
30.	785.	-5.16E+04	5.16E+04	-5.08E+04	5.10E+04	-1.72E+03	1.67E+03
45.	-319.	-5.95E+04	5.95E+04	-5.61E+04	5.61E+04	-1.24E+03	1.25E+03
65.	-4.15E+03	-7.96E+04	7.96E+04	-7.47E+04	7.34E+04	-1.09E+03	1.19E+03

Table N-596. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.06E-04	5.72E-09	4.12E-04	1.80E-07	4.09E-04	-4.12E-05	4.05E-05
15.	1.84E-03	5.15E-08	3.67E-03	1.73E-06	3.64E-03	-1.23E-04	1.20E-04
30.	7.18E-03	2.06E-07	1.42E-02	8.35E-06	1.41E-02	-2.39E-04	2.30E-04
45.	1.55E-02	4.63E-07	3.01E-02	2.41E-05	2.99E-02	-3.43E-04	3.20E-04
65.	2.96E-02	9.67E-07	5.57E-02	7.13E-05	5.54E-02	-4.54E-04	3.97E-04

Table N-597. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	3.92	-283.	283.	-267.	268.	-54.2	52.8
15.	102.	-6.72E+03	6.72E+03	-6.63E+03	6.63E+03	-449.	435.
30.	640.	-4.46E+04	4.45E+04	-4.43E+04	4.43E+04	-1.50E+03	1.45E+03
45.	-238.	-5.09E+04	5.10E+04	-5.01E+04	4.96E+04	-1.11E+03	1.11E+03
65.	-3.27E+03	-9.14E+04	9.14E+04	-8.92E+04	8.93E+04	-1.32E+03	1.42E+03

Table N-598. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	3.92	-283.	283.	-267.	268.	-54.2	52.8
15.	102.	-6.72E+03	6.72E+03	-6.63E+03	6.63E+03	-449.	435.
30.	640.	-4.46E+04	4.45E+04	-4.43E+04	4.43E+04	-1.50E+03	1.45E+03
45.	-238.	-5.09E+04	5.10E+04	-5.01E+04	4.96E+04	-1.11E+03	1.11E+03
65.	-3.27E+03	-9.14E+04	9.14E+04	-8.92E+04	8.93E+04	-1.32E+03	1.42E+03

# TASK 1/ROLL MOTION/MODEL 5514

Table N-599. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-600. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.89E-04	-0.104	7.59E-02	-3.05E-02	2.54E-02	-6.04E-03	5.14E-03
15.	-3.95E-03	-7.34E-02	7.70E-02	-2.57E-02	1.85E-02	-1.45E-03	1.50E-03
30.	-2.70E-05	-0.103	8.20E-02	-4.05E-02	2.54E-02	-1.35E-03	8.47E-04
45.	-0.384	-4.55E+04	4.55E+04	-4.52E+04	4.52E+04	-1.00E+03	1.00E+03
65.	677.	-1.46E+05	1.49E+05	-1.46E+05	1.48E+05	-2.25E+03	2.27E+03

# TASK 1/ROLL MOTION/MODEL 5514

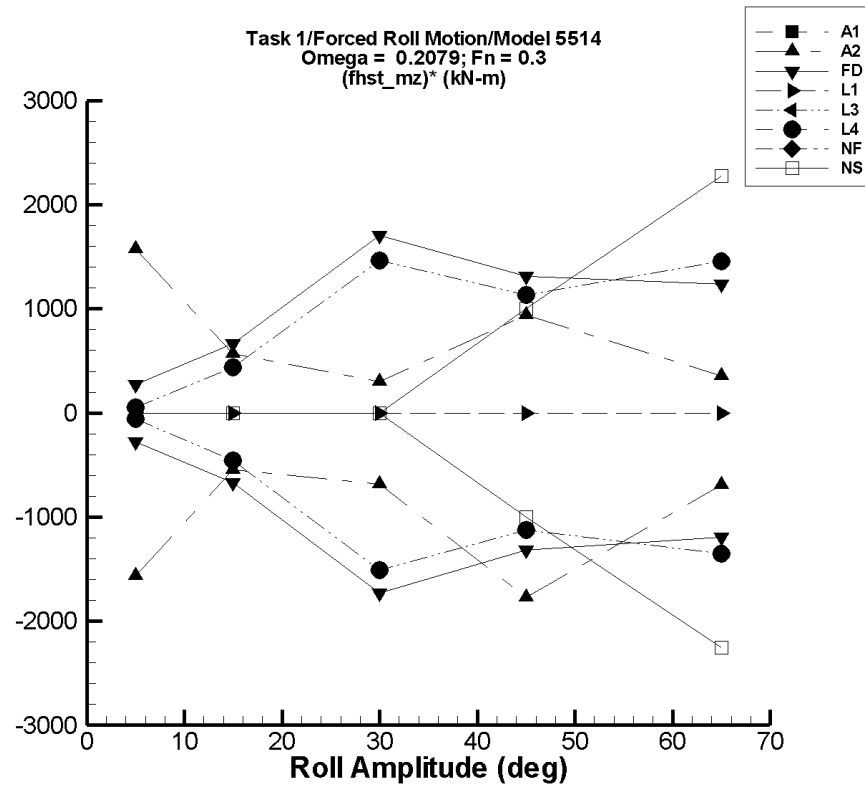


Figure N-76. Minimum and Maximum of  $(M_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

TASK 1/ROLL MOTION/MODEL 5514

Table N-601. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-602. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-24.7	-7.84E+03	7.84E+03	-7.84E+03	7.83E+03	-1.56E+03	1.57E+03
15.	-170.	-8.35E+03	8.35E+03	-8.34E+03	8.34E+03	-545.	567.
30.	-607.	-1.09E+05	9.23E+03	-2.11E+04	8.35E+03	-682.	299.
45.	-2.95E+03	-4.41E+05	3.10E+05	-8.27E+04	3.95E+04	-1.77E+03	943.
65.	-2.85E+03	-2.85E+05	1.75E+05	-4.75E+04	2.01E+04	-688.	353.

Table N-603. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	5.52E-02	-1.38E+03	1.38E+03	-1.38E+03	1.38E+03	-275.	275.
15.	48.1	-1.01E+04	1.01E+04	-1.00E+04	1.00E+04	-672.	666.
30.	328.	-5.16E+04	5.16E+04	-5.15E+04	5.15E+04	-1.73E+03	1.71E+03
45.	74.9	-5.95E+04	5.95E+04	-5.92E+04	5.92E+04	-1.32E+03	1.31E+03
65.	-1.35E+03	-7.96E+04	7.96E+04	-7.91E+04	7.91E+04	-1.20E+03	1.24E+03

Table N-604. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	2.06E-04	4.35E-10	4.12E-04	2.60E-07	4.12E-04	-4.12E-05	4.12E-05
15.	1.84E-03	3.91E-09	3.67E-03	2.34E-06	3.67E-03	-1.23E-04	1.22E-04
30.	7.18E-03	1.56E-08	1.42E-02	9.36E-06	1.42E-02	-2.39E-04	2.33E-04
45.	1.55E-02	3.52E-08	3.01E-02	2.11E-05	3.01E-02	-3.43E-04	3.25E-04
65.	2.96E-02	7.37E-08	5.57E-02	4.42E-05	5.57E-02	-4.55E-04	4.02E-04

Table N-605. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.95	-287.	286.	-279.	279.	-56.7	55.0
15.	102.	-6.72E+03	6.72E+03	-6.71E+03	6.71E+03	-454.	441.
30.	660.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.51E+03	1.46E+03
45.	-114.	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.13E+03	1.13E+03
65.	-3.34E+03	-9.15E+04	9.15E+04	-9.13E+04	9.13E+04	-1.35E+03	1.46E+03

Table N-606. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.95	-287.	286.	-279.	279.	-56.7	55.0
15.	102.	-6.72E+03	6.72E+03	-6.71E+03	6.71E+03	-454.	441.
30.	660.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.51E+03	1.46E+03
45.	-114.	-5.10E+04	5.10E+04	-5.08E+04	5.08E+04	-1.13E+03	1.13E+03
65.	-3.34E+03	-9.15E+04	9.15E+04	-9.13E+04	9.13E+04	-1.35E+03	1.46E+03



TASK 1/ROLL MOTION/MODEL 5514

Table N-607. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-608. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.17E-04	-7.01E-02	7.20E-02	-2.57E-02	2.18E-02	-5.07E-03	4.42E-03
15.	2.07E-04	-6.88E-02	8.35E-02	-2.71E-02	3.00E-02	-1.82E-03	1.99E-03
30.	-8.48E-04	-0.136	9.53E-02	-2.55E-02	3.78E-02	-8.23E-04	1.29E-03
45.	-0.694	-4.56E+04	4.55E+04	-4.52E+04	4.52E+04	-1.00E+03	1.00E+03
65.	670.	-1.46E+05	1.49E+05	-1.46E+05	1.48E+05	-2.25E+03	2.27E+03

# TASK 1/ROLL MOTION/MODEL 5514

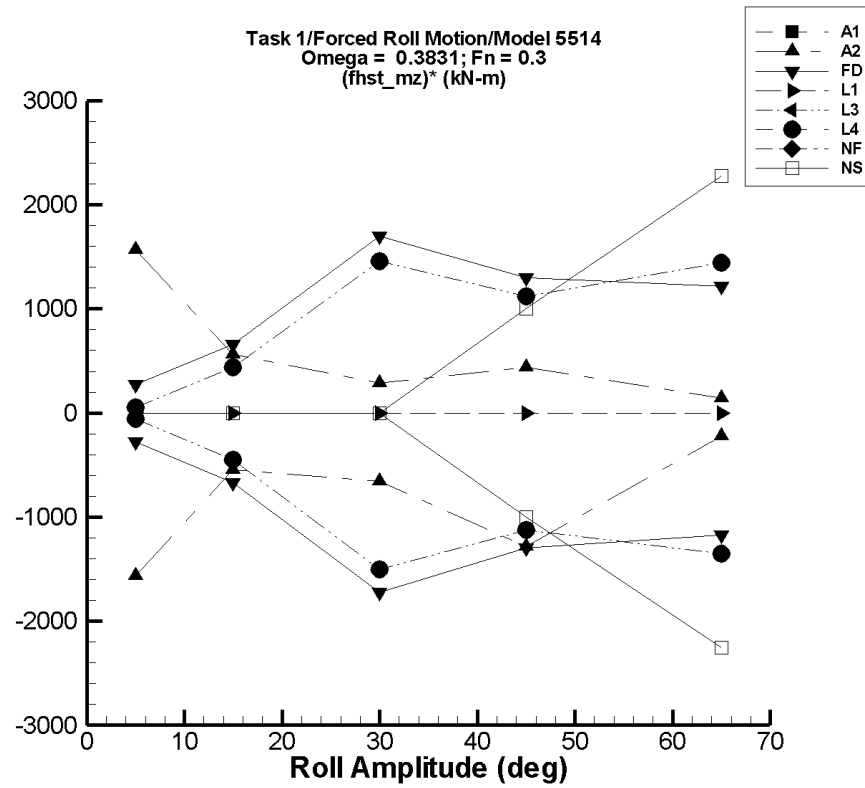


Figure N-77. Minimum and Maximum of  $(M_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

TASK 1/ROLL MOTION/MODEL 5514

Table N-609. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-610. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-22.5	-7.84E+03	7.84E+03	-7.86E+03	7.82E+03	-1.57E+03	1.57E+03
15.	-155.	-8.34E+03	8.35E+03	-8.30E+03	8.30E+03	-543.	564.
30.	-857.	-1.09E+05	9.75E+03	-2.05E+04	7.83E+03	-656.	290.
45.	-1.65E+03	-4.41E+05	1.73E+05	-5.95E+04	1.81E+04	-1.29E+03	440.
65.	-2.25E+03	-1.69E+04	9.79E+03	-1.67E+04	7.16E+03	-223.	145.

Table N-611. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.533	-1.38E+03	1.38E+03	-1.37E+03	1.37E+03	-274.	274.
15.	48.7	-1.01E+04	1.01E+04	-9.97E+03	9.97E+03	-668.	662.
30.	306.	-5.16E+04	5.16E+04	-5.13E+04	5.13E+04	-1.72E+03	1.70E+03
45.	-149.	-5.95E+04	5.95E+04	-5.84E+04	5.84E+04	-1.29E+03	1.30E+03
65.	-1.49E+03	-7.96E+04	7.96E+04	-7.77E+04	7.77E+04	-1.17E+03	1.22E+03

Table N-612. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.06E-04	3.27E-09	4.12E-04	-2.35E-07	4.11E-04	-4.13E-05	4.10E-05
15.	1.84E-03	2.93E-08	3.67E-03	-2.08E-06	3.66E-03	-1.23E-04	1.21E-04
30.	7.18E-03	1.17E-07	1.42E-02	-7.88E-06	1.42E-02	-2.40E-04	2.33E-04
45.	1.55E-02	2.65E-07	3.01E-02	-1.60E-05	3.00E-02	-3.44E-04	3.24E-04
65.	2.96E-02	5.53E-07	5.57E-02	-2.67E-05	5.56E-02	-4.55E-04	4.01E-04

Table N-613. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	4.30	-284.	286.	-273.	276.	-55.4	54.3
15.	98.2	-6.72E+03	6.72E+03	-6.69E+03	6.69E+03	-453.	440.
30.	665.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.50E+03	1.46E+03
45.	12.8	-5.10E+04	5.10E+04	-5.04E+04	5.05E+04	-1.12E+03	1.12E+03
65.	-3.09E+03	-9.14E+04	9.14E+04	-9.08E+04	9.07E+04	-1.35E+03	1.44E+03

Table N-614. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	4.30	-284.	286.	-273.	276.	-55.4	54.3
15.	98.2	-6.72E+03	6.72E+03	-6.69E+03	6.69E+03	-453.	440.
30.	665.	-4.46E+04	4.46E+04	-4.45E+04	4.45E+04	-1.50E+03	1.46E+03
45.	12.8	-5.10E+04	5.10E+04	-5.04E+04	5.05E+04	-1.12E+03	1.12E+03
65.	-3.09E+03	-9.14E+04	9.14E+04	-9.08E+04	9.07E+04	-1.35E+03	1.44E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-615. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-616. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-7.88E-04	-7.12E-02	8.43E-02	-3.12E-02	1.69E-02	-6.09E-03	3.53E-03
15.	1.28E-04	-7.90E-02	8.66E-02	-2.72E-02	2.51E-02	-1.82E-03	1.66E-03
30.	1.25E-03	-8.72E-02	8.83E-02	-4.18E-02	3.34E-02	-1.44E-03	1.07E-03
45.	0.918	-4.55E+04	4.55E+04	-4.52E+04	4.52E+04	-1.00E+03	1.00E+03
65.	668.	-1.46E+05	1.49E+05	-1.46E+05	1.48E+05	-2.25E+03	2.27E+03

# TASK 1/ROLL MOTION/MODEL 5514

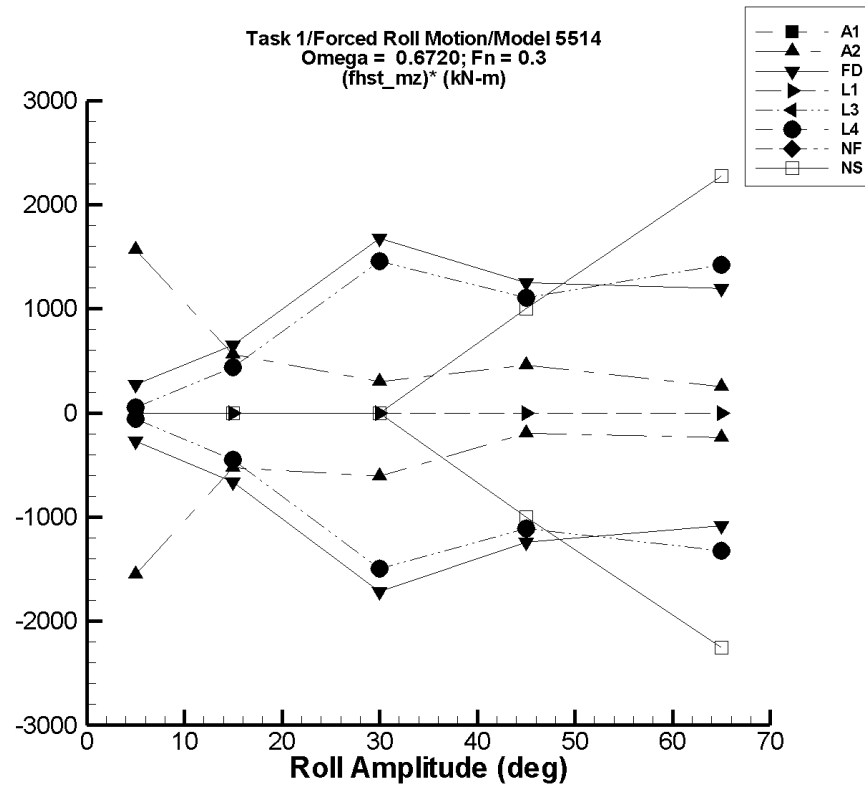


Figure N-78. Minimum and Maximum of  $(M_z^{hst})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

TASK 1/ROLL MOTION/MODEL 5514

Table N-617. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-618. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-42.7	-7.83E+03	7.83E+03	-7.79E+03	7.79E+03	-1.55E+03	1.57E+03
15.	-289.	-8.35E+03	8.35E+03	-8.15E+03	8.15E+03	-524.	563.
30.	-1.40E+03	-1.09E+05	8.41E+03	-1.97E+04	7.70E+03	-610.	304.
45.	2.11E+03	-8.39E+03	1.79E+05	-6.71E+03	2.27E+04	-196.	457.
65.	-931.	-1.68E+04	1.15E+05	-1.65E+04	1.54E+04	-239.	251.



Table N–619. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.552	-1.38E+03	1.38E+03	-1.36E+03	1.37E+03	-272.	273.
15.	126.	-1.01E+04	1.01E+04	-9.78E+03	9.86E+03	-661.	649.
30.	785.	-5.16E+04	5.16E+04	-5.08E+04	5.10E+04	-1.72E+03	1.67E+03
45.	-319.	-5.95E+04	5.95E+04	-5.61E+04	5.61E+04	-1.24E+03	1.25E+03
65.	-4.15E+03	-7.96E+04	7.96E+04	-7.47E+04	7.34E+04	-1.09E+03	1.19E+03

Table N–620. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.06E-04	5.72E-09	4.12E-04	1.80E-07	4.09E-04	-4.12E-05	4.05E-05
15.	1.84E-03	5.15E-08	3.67E-03	1.73E-06	3.64E-03	-1.23E-04	1.20E-04
30.	7.18E-03	2.06E-07	1.42E-02	8.35E-06	1.41E-02	-2.39E-04	2.30E-04
45.	1.55E-02	4.63E-07	3.01E-02	2.41E-05	2.99E-02	-3.43E-04	3.20E-04
65.	2.96E-02	9.67E-07	5.57E-02	7.13E-05	5.54E-02	-4.54E-04	3.97E-04

Table N-621. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	3.83	-284.	284.	-268.	268.	-54.3	52.8
15.	101.	-6.72E+03	6.72E+03	-6.63E+03	6.63E+03	-449.	435.
30.	640.	-4.46E+04	4.45E+04	-4.43E+04	4.43E+04	-1.50E+03	1.45E+03
45.	-238.	-5.09E+04	5.10E+04	-5.02E+04	4.96E+04	-1.11E+03	1.11E+03
65.	-3.27E+03	-9.14E+04	9.14E+04	-8.92E+04	8.93E+04	-1.32E+03	1.42E+03

Table N-622. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{hst}}$ Max. (kN-m)	Filtered $(M_z^{\text{hst}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	3.83	-284.	284.	-268.	268.	-54.3	52.8
15.	101.	-6.72E+03	6.72E+03	-6.63E+03	6.63E+03	-449.	435.
30.	640.	-4.46E+04	4.45E+04	-4.43E+04	4.43E+04	-1.50E+03	1.45E+03
45.	-238.	-5.09E+04	5.10E+04	-5.02E+04	4.96E+04	-1.11E+03	1.11E+03
65.	-3.27E+03	-9.14E+04	9.14E+04	-8.92E+04	8.93E+04	-1.32E+03	1.42E+03

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Table N-623. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-624. Minimum and Maximum of  $M_z^{\text{hst}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{hst}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{hst}}$		Filtered $M_z^{\text{hst}}$		Filtered $(M_z^{\text{hst}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.89E-04	-0.104	7.59E-02	-3.05E-02	2.54E-02	-6.04E-03	5.14E-03
15.	-3.95E-03	-7.34E-02	7.70E-02	-2.57E-02	1.85E-02	-1.45E-03	1.50E-03
30.	-2.70E-05	-0.103	8.20E-02	-4.05E-02	2.54E-02	-1.35E-03	8.47E-04
45.	-0.384	-4.55E+04	4.55E+04	-4.52E+04	4.52E+04	-1.00E+03	1.00E+03
65.	677.	-1.46E+05	1.49E+05	-1.46E+05	1.48E+05	-2.25E+03	2.27E+03

# TASK 1/ROLL MOTION/MODEL 5514

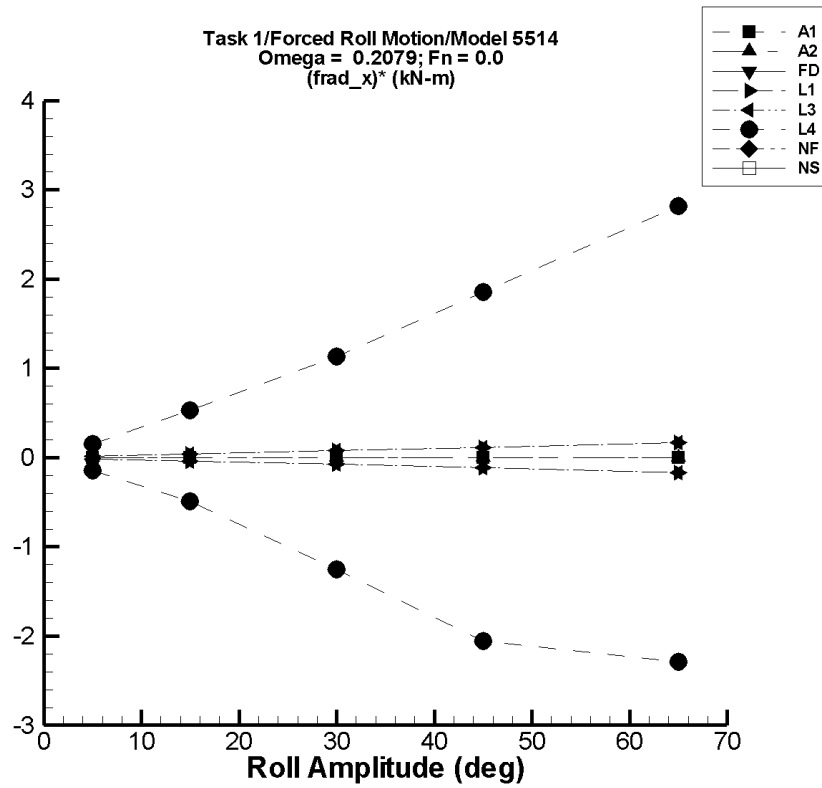


Figure N-79. Minimum and Maximum of  $(F_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-625. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-1.89E-05	-9.40E-03	9.46E-03	-2.30E-03	2.32E-03	-4.56E-04	4.67E-04
15.	-5.67E-05	-2.82E-02	2.84E-02	-6.89E-03	6.95E-03	-4.55E-04	4.67E-04
30.	-1.13E-04	-5.64E-02	5.67E-02	-1.38E-02	1.39E-02	-4.55E-04	4.67E-04
45.	-1.70E-04	-8.46E-02	8.51E-02	-2.07E-02	2.09E-02	-4.55E-04	4.67E-04
65.	-2.46E-04	-0.122	0.123	-2.98E-02	3.01E-02	-4.55E-04	4.67E-04

Table N-626. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-1.89E-05	-9.40E-03	9.46E-03	-2.30E-03	2.32E-03	-4.56E-04	4.67E-04
15.	-5.67E-05	-2.82E-02	2.84E-02	-6.89E-03	6.95E-03	-4.55E-04	4.67E-04
30.	-1.13E-04	-5.64E-02	5.67E-02	-1.38E-02	1.39E-02	-4.55E-04	4.67E-04
45.	-1.70E-04	-8.46E-02	8.51E-02	-2.07E-02	2.09E-02	-4.55E-04	4.67E-04
65.	-2.46E-04	-0.122	0.123	-2.98E-02	3.01E-02	-4.55E-04	4.67E-04

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Table N-627. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-628. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-6.37E-02	-0.128	4.39E-05	-0.127	-5.54E-05	-1.27E-02	1.27E-02
15.	-0.574	-1.15	1.76E-04	-1.15	-7.28E-04	-3.82E-02	3.82E-02
30.	-2.29	-4.59	4.89E-04	-4.59	-3.13E-03	-7.65E-02	7.64E-02
45.	-5.16	-10.3	9.52E-04	-10.3	-7.21E-03	-0.115	0.115
65.	-10.8	-21.6	1.76E-03	-21.5	-1.52E-02	-0.166	0.166

Table N–629. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-6.37E-02	-0.128	4.39E-05	-0.127	-5.54E-05	-1.27E-02	1.27E-02
15.	-0.574	-1.15	1.76E-04	-1.15	-7.28E-04	-3.82E-02	3.82E-02
30.	-2.29	-4.59	4.89E-04	-4.59	-3.13E-03	-7.65E-02	7.64E-02
45.	-5.16	-10.3	9.52E-04	-10.3	-7.21E-03	-0.115	0.115
65.	-10.8	-21.6	1.76E-03	-21.5	-1.52E-02	-0.166	0.166

Table N–630. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-9.13E-02	-1.02	0.735	-0.828	0.653	-0.147	0.149
15.	-0.812	-8.76	7.46	-8.11	7.16	-0.487	0.532
30.	-3.50	-42.5	32.6	-41.0	30.4	-1.25	1.13
45.	-8.86	-105.	78.0	-101.	74.5	-2.05	1.85
65.	-14.8	-193.	191.	-164.	168.	-2.29	2.82

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Table N–631. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–632. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—



Task 1/ROLL MOTION/MODEL 5514

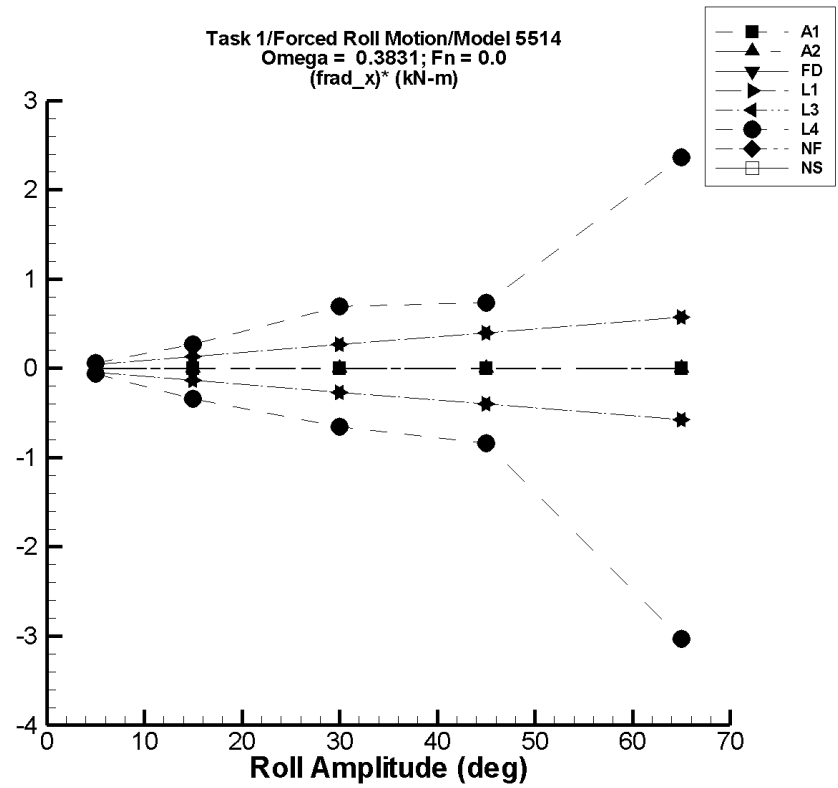


Figure N-80. Minimum and Maximum of  $(F_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-633. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-7.56E-05	-1.53E-02	1.14E-02	-8.49E-03	7.50E-03	-1.68E-03	1.52E-03
15.	-2.27E-04	-4.60E-02	3.42E-02	-2.55E-02	2.25E-02	-1.68E-03	1.52E-03
30.	-4.53E-04	-9.20E-02	6.84E-02	-5.09E-02	4.50E-02	-1.68E-03	1.52E-03
45.	-6.80E-04	-0.138	0.103	-7.64E-02	6.75E-02	-1.68E-03	1.52E-03
65.	-9.82E-04	-0.199	0.148	-0.110	9.75E-02	-1.68E-03	1.52E-03

Table N-634. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-7.56E-05	-1.53E-02	1.14E-02	-8.49E-03	7.50E-03	-1.68E-03	1.52E-03
15.	-2.27E-04	-4.60E-02	3.42E-02	-2.55E-02	2.25E-02	-1.68E-03	1.52E-03
30.	-4.53E-04	-9.20E-02	6.84E-02	-5.09E-02	4.50E-02	-1.68E-03	1.52E-03
45.	-6.80E-04	-0.138	0.103	-7.64E-02	6.75E-02	-1.68E-03	1.52E-03
65.	-9.82E-04	-0.199	0.148	-0.110	9.75E-02	-1.68E-03	1.52E-03

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Table N-635. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-636. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.222	-0.444	2.69E-04	-0.444	-9.19E-04	-4.45E-02	4.42E-02
15.	-2.00	-4.00	1.44E-03	-4.00	-9.24E-03	-0.133	0.133
30.	-7.99	-16.0	4.75E-03	-16.0	-3.79E-02	-0.267	0.265
45.	-18.0	-36.0	9.96E-03	-36.0	-8.60E-02	-0.400	0.398
65.	-37.5	-75.1	1.99E-02	-75.1	-0.180	-0.578	0.574

Table N-637. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.222	-0.444	2.69E-04	-0.444	-9.19E-04	-4.45E-02	4.42E-02
15.	-2.00	-4.00	1.44E-03	-4.00	-9.24E-03	-0.133	0.133
30.	-7.99	-16.0	4.75E-03	-16.0	-3.79E-02	-0.267	0.265
45.	-18.0	-36.0	9.96E-03	-36.0	-8.60E-02	-0.400	0.398
65.	-37.5	-75.1	1.99E-02	-75.1	-0.180	-0.578	0.574

Table N-638. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.311	-1.05	0.496	-0.612	-8.75E-03	-6.03E-02	6.05E-02
15.	-2.65	-10.7	2.25	-7.73	1.32	-0.339	0.265
30.	-9.58	-40.2	15.9	-29.4	11.2	-0.659	0.693
45.	-14.5	-65.4	30.6	-52.4	18.3	-0.843	0.730
65.	-29.2	-294.	155.	-226.	124.	-3.03	2.36

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Table N–639. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–640. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

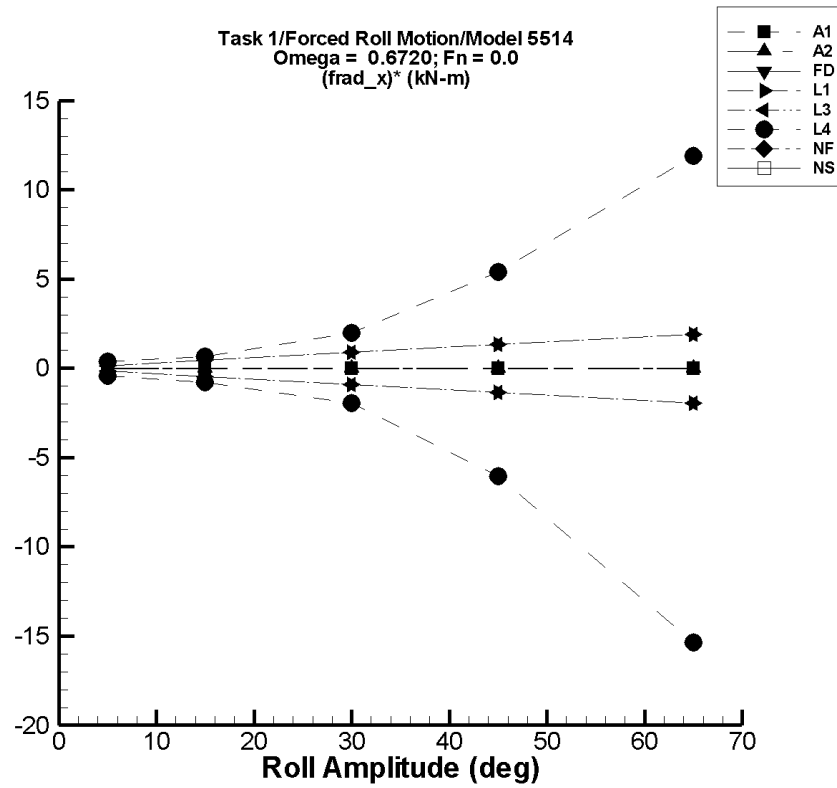


Figure N-81. Minimum and Maximum of  $(F_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-641. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered $(F_x^{\text{rad}})^*$ Min. (kN/°)	Max. (kN/°)
5.	1.85E-04	-2.69E-02	2.86E-02	-2.65E-02	2.80E-02	-5.33E-03	5.56E-03
15.	5.54E-04	-8.07E-02	8.58E-02	-7.94E-02	8.39E-02	-5.33E-03	5.55E-03
30.	1.11E-03	-0.161	0.172	-0.159	0.168	-5.33E-03	5.55E-03
45.	1.66E-03	-0.242	0.257	-0.238	0.252	-5.33E-03	5.55E-03
65.	2.40E-03	-0.350	0.372	-0.344	0.363	-5.33E-03	5.55E-03

Table N-642. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered $(F_x^{\text{rad}})^*$ Min. (kN/°)	Max. (kN/°)
5.	1.85E-04	-2.69E-02	2.86E-02	-2.65E-02	2.80E-02	-5.33E-03	5.56E-03
15.	5.54E-04	-8.07E-02	8.58E-02	-7.94E-02	8.39E-02	-5.33E-03	5.55E-03
30.	1.11E-03	-0.161	0.172	-0.159	0.168	-5.33E-03	5.55E-03
45.	1.66E-03	-0.242	0.257	-0.238	0.252	-5.33E-03	5.55E-03
65.	2.40E-03	-0.350	0.372	-0.344	0.363	-5.33E-03	5.55E-03

Table N-643. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-644. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.774	-1.52	-2.42E-02	-1.52	-3.64E-02	-0.150	0.148
15.	-6.97	-13.7	-0.219	-13.7	-0.329	-0.450	0.443
30.	-27.9	-54.9	-0.876	-54.9	-1.32	-0.901	0.885
45.	-62.7	-123.	-1.97	-123.	-2.97	-1.35	1.33
65.	-131.	-258.	-4.12	-258.	-6.20	-1.95	1.92



Table N-645. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.774	-1.52	-2.42E-02	-1.52	-3.64E-02	-0.150	0.148
15.	-6.97	-13.7	-0.219	-13.7	-0.329	-0.450	0.443
30.	-27.9	-54.9	-0.876	-54.9	-1.32	-0.901	0.885
45.	-62.7	-123.	-1.97	-123.	-2.97	-1.35	1.33
65.	-131.	-258.	-4.12	-258.	-6.20	-1.95	1.92

Table N-646. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.877	-5.67	2.18	-3.00	1.07	-0.424	0.390
15.	-8.25	-27.2	6.78	-19.8	1.86	-0.770	0.674
30.	-32.6	-107.	50.1	-91.1	26.7	-1.95	1.97
45.	-63.2	-406.	255.	-336.	179.	-6.05	5.39
65.	-148.	-1.31E+03	766.	-1.15E+03	627.	-15.4	11.9

# TASK 1/ROLL MOTION/MODEL 5514

Table N–647. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–648. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

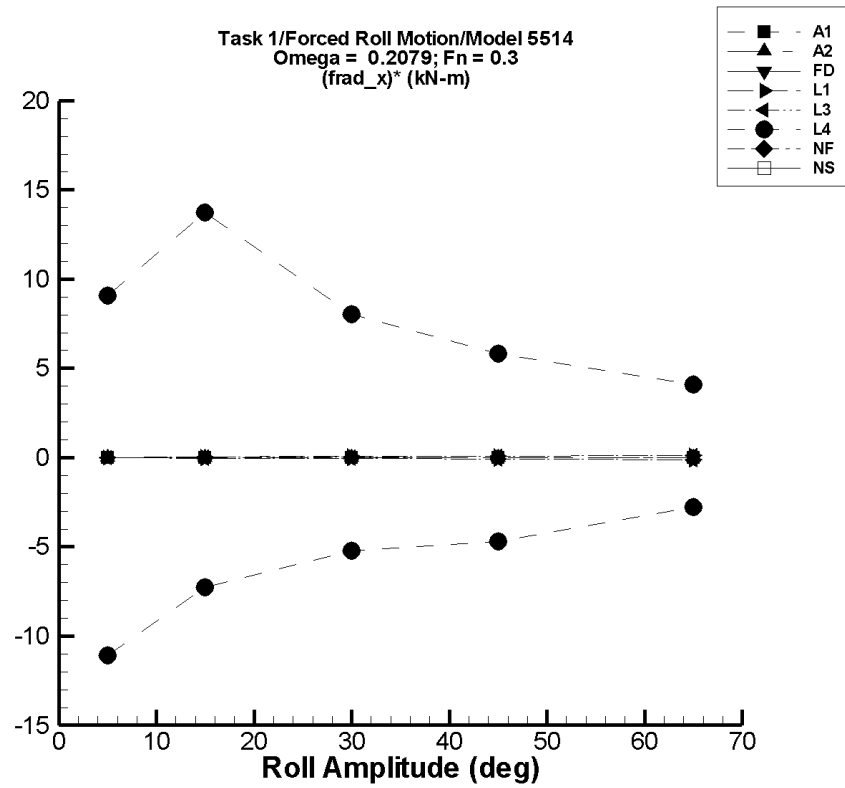


Figure N-82. Minimum and Maximum of  $(F_x^{rad})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-649. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-1.51E-05	-2.10E-02	2.07E-02	-1.03E-02	1.02E-02	-2.06E-03	2.05E-03
15.	-4.52E-05	-6.29E-02	6.21E-02	-3.09E-02	3.07E-02	-2.05E-03	2.05E-03
30.	-9.04E-05	-0.126	0.124	-6.17E-02	6.13E-02	-2.05E-03	2.05E-03
45.	-1.36E-04	-0.189	0.186	-9.26E-02	9.20E-02	-2.05E-03	2.05E-03
65.	-1.96E-04	-0.272	0.269	-0.134	0.133	-2.05E-03	2.05E-03

Table N-650. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-1.51E-05	-2.10E-02	2.07E-02	-1.03E-02	1.02E-02	-2.06E-03	2.05E-03
15.	-4.52E-05	-6.29E-02	6.21E-02	-3.09E-02	3.07E-02	-2.05E-03	2.05E-03
30.	-9.04E-05	-0.126	0.124	-6.17E-02	6.13E-02	-2.05E-03	2.05E-03
45.	-1.36E-04	-0.189	0.186	-9.26E-02	9.20E-02	-2.05E-03	2.05E-03
65.	-1.96E-04	-0.272	0.269	-0.134	0.133	-2.05E-03	2.05E-03

Table N–651. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–652. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-1.99E-02	1.66E-02
15.	-332.	-333.	-332.	-333.	-332.	-3.11E-02	2.95E-02
30.	-333.	-335.	-332.	-335.	-332.	-5.74E-02	5.71E-02
45.	-335.	-339.	-331.	-339.	-332.	-8.53E-02	8.53E-02
65.	-339.	-347.	-331.	-347.	-331.	-0.123	0.123

Table N–653. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-1.25E-02	1.17E-02
15.	-332.	-333.	-332.	-333.	-332.	-2.92E-02	2.91E-02
30.	-333.	-335.	-332.	-335.	-332.	-5.71E-02	5.69E-02
45.	-335.	-339.	-332.	-339.	-332.	-8.53E-02	8.52E-02
65.	-339.	-347.	-331.	-347.	-331.	-0.123	0.123

Table N–654. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-305.	-372.	-85.4	-361.	-260.	-11.1	9.06
15.	-284.	-416.	26.8	-393.	-78.1	-7.26	13.7
30.	-297.	-515.	-2.24	-454.	-56.0	-5.23	8.03
45.	-306.	-588.	26.7	-517.	-43.7	-4.70	5.82
65.	-297.	-761.	134.	-477.	-29.7	-2.77	4.11

# TASK 1/ROLL MOTION/MODEL 5514

Table N–655. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–656. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

TASK 1/ROLL MOTION/MODEL 5514

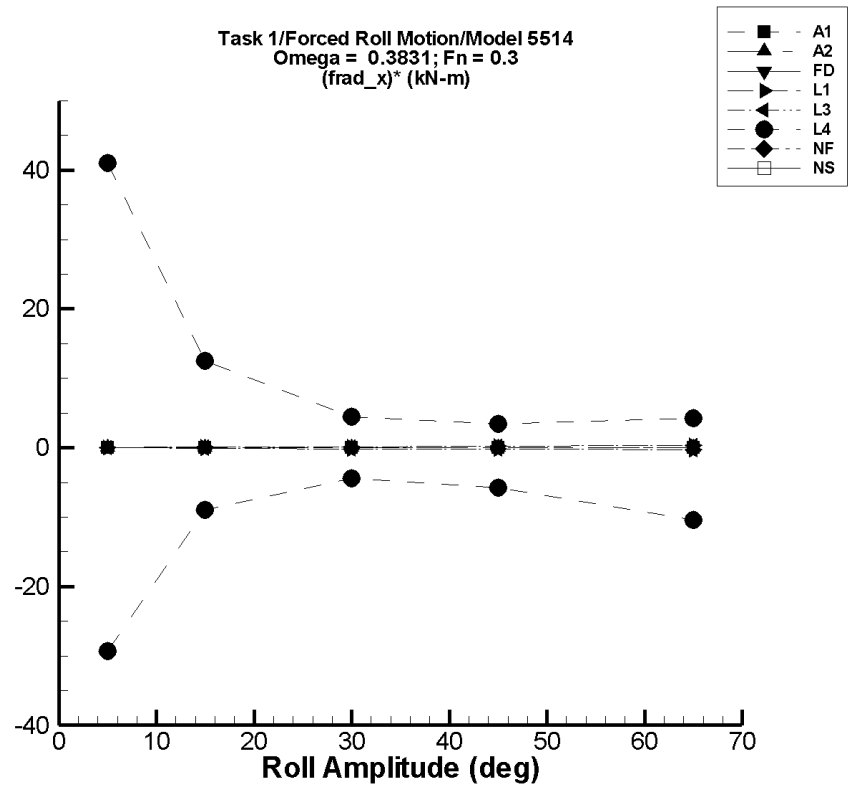


Figure N-83. Minimum and Maximum of  $(F_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.



Table N-657. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered $(F_x^{\text{rad}})^*$ Min. (kN/°)	Max. (kN/°)
5.	1.41E-04	-2.00E-02	1.70E-02	-9.10E-03	7.50E-03	-1.85E-03	1.47E-03
15.	4.22E-04	-5.98E-02	5.09E-02	-2.73E-02	2.25E-02	-1.85E-03	1.47E-03
30.	8.44E-04	-0.120	0.102	-5.46E-02	4.50E-02	-1.85E-03	1.47E-03
45.	1.27E-03	-0.179	0.153	-8.19E-02	6.75E-02	-1.85E-03	1.47E-03
65.	1.83E-03	-0.259	0.221	-0.118	9.74E-02	-1.85E-03	1.47E-03

Table N-658. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered $(F_x^{\text{rad}})^*$ Min. (kN/°)	Max. (kN/°)
5.	1.41E-04	-2.00E-02	1.70E-02	-9.10E-03	7.50E-03	-1.85E-03	1.47E-03
15.	4.22E-04	-5.98E-02	5.09E-02	-2.73E-02	2.25E-02	-1.85E-03	1.47E-03
30.	8.44E-04	-0.120	0.102	-5.46E-02	4.50E-02	-1.85E-03	1.47E-03
45.	1.27E-03	-0.179	0.153	-8.19E-02	6.75E-02	-1.85E-03	1.47E-03
65.	1.83E-03	-0.259	0.221	-0.118	9.74E-02	-1.85E-03	1.47E-03

Table N–659. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–660. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-3.19E-02	2.89E-02
15.	-333.	-334.	-331.	-334.	-332.	-7.84E-02	7.91E-02
30.	-336.	-341.	-331.	-341.	-331.	-0.157	0.157
45.	-341.	-352.	-330.	-352.	-330.	-0.235	0.236
65.	-351.	-373.	-329.	-373.	-329.	-0.340	0.340

Table N-661. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-2.65E-02	2.72E-02
15.	-333.	-334.	-332.	-334.	-332.	-7.84E-02	7.85E-02
30.	-336.	-341.	-331.	-341.	-331.	-0.157	0.157
45.	-341.	-352.	-330.	-352.	-331.	-0.235	0.235
65.	-351.	-373.	-329.	-373.	-329.	-0.340	0.340

Table N-662. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-293.	-479.	56.2	-439.	-87.4	-29.3	41.0
15.	-270.	-444.	30.4	-405.	-83.5	-8.99	12.5
30.	-281.	-470.	-29.5	-415.	-147.	-4.45	4.47
45.	-306.	-655.	-21.6	-567.	-154.	-5.79	3.38
65.	-334.	-1.24E+03	137.	-1.01E+03	-55.3	-10.5	4.29

# TASK 1/ROLL MOTION/MODEL 5514

Table N-663. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-664. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

# TASK 1/ROLL MOTION/MODEL 5514

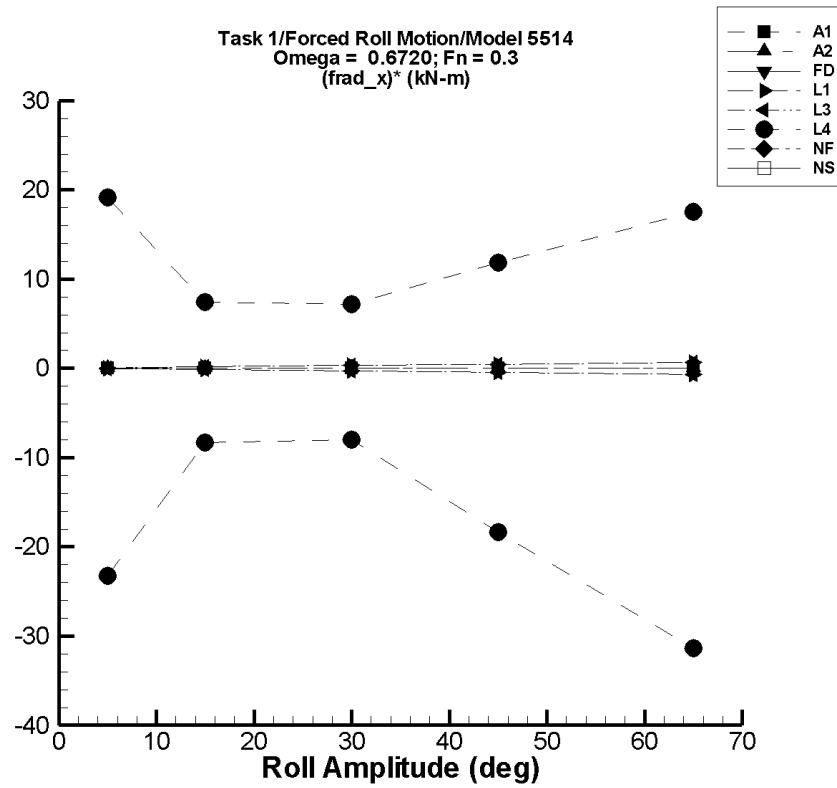


Figure N-84. Minimum and Maximum of  $(F_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-665. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-2.65E-05	-2.59E-02	1.96E-02	-1.76E-02	1.73E-02	-3.52E-03	3.46E-03
15.	-7.96E-05	-7.78E-02	5.87E-02	-5.29E-02	5.17E-02	-3.52E-03	3.45E-03
30.	-1.59E-04	-0.156	0.117	-0.106	0.103	-3.52E-03	3.45E-03
45.	-2.39E-04	-0.233	0.176	-0.159	0.155	-3.52E-03	3.45E-03
65.	-3.45E-04	-0.337	0.254	-0.229	0.224	-3.52E-03	3.45E-03

Table N-666. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_x^{\text{rad}}$ Max. (kN)	Filtered Min. (kN/°)	$(F_x^{\text{rad}})^*$ Max. (kN/°)
5.	-2.65E-05	-2.59E-02	1.96E-02	-1.76E-02	1.73E-02	-3.52E-03	3.46E-03
15.	-7.96E-05	-7.78E-02	5.87E-02	-5.29E-02	5.17E-02	-3.52E-03	3.45E-03
30.	-1.59E-04	-0.156	0.117	-0.106	0.103	-3.52E-03	3.45E-03
45.	-2.39E-04	-0.233	0.176	-0.159	0.155	-3.52E-03	3.45E-03
65.	-3.45E-04	-0.337	0.254	-0.229	0.224	-3.52E-03	3.45E-03

Table N–667. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–668. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-5.58E-02	5.28E-02
15.	-334.	-337.	-332.	-337.	-332.	-0.157	0.157
30.	-343.	-352.	-333.	-352.	-333.	-0.314	0.313
45.	-356.	-378.	-335.	-378.	-335.	-0.471	0.470
65.	-383.	-428.	-338.	-427.	-339.	-0.680	0.679

Table N–669. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-332.	-332.	-332.	-332.	-332.	-5.34E-02	5.29E-02
15.	-335.	-337.	-332.	-337.	-332.	-0.157	0.157
30.	-343.	-352.	-333.	-352.	-333.	-0.314	0.313
45.	-356.	-378.	-335.	-378.	-335.	-0.471	0.470
65.	-383.	-428.	-338.	-427.	-339.	-0.680	0.679

Table N–670. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-271.	-411.	-46.3	-387.	-176.	-23.2	19.1
15.	-248.	-431.	-30.7	-373.	-137.	-8.35	7.39
30.	-321.	-649.	17.3	-561.	-106.	-8.00	7.16
45.	-395.	-1.49E+03	269.	-1.22E+03	138.	-18.3	11.8
65.	-391.	-2.73E+03	878.	-2.43E+03	749.	-31.4	17.5



# TASK 1/ROLL MOTION/MODEL 5514

Table N–671. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N–672. Minimum and Maximum of  $F_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_x^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_x^{\text{rad}}$		Filtered $F_x^{\text{rad}}$		Filtered $(F_x^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

TASK 1/ROLL MOTION/MODEL 5514

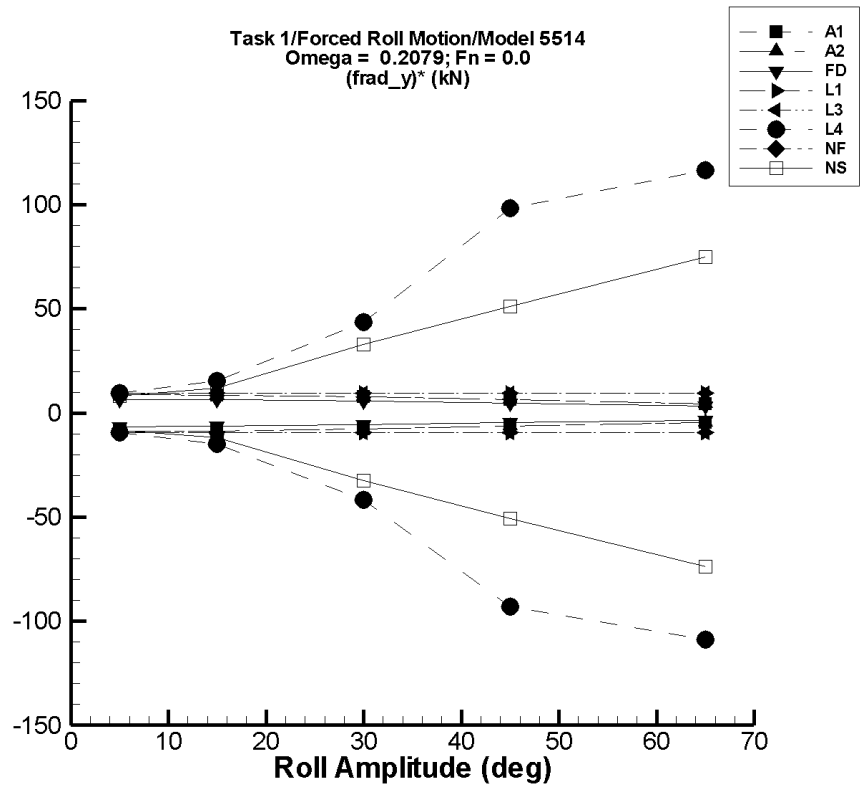


Figure N-85. Minimum and Maximum of  $(F_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-673. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.06E-02	-55.4	54.9	-44.2	44.1	-8.84	8.82
15.	9.40E-02	-161.	160.	-128.	128.	-8.57	8.55
30.	1.04E-02	-293.	289.	-230.	230.	-7.68	7.67
45.	-0.403	-367.	361.	-282.	282.	-6.27	6.28
65.	-1.66	-491.	477.	-293.	291.	-4.47	4.51

Table N-674. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.06E-02	-55.4	54.9	-44.2	44.1	-8.84	8.82
15.	9.40E-02	-161.	160.	-128.	128.	-8.57	8.55
30.	1.04E-02	-293.	289.	-230.	230.	-7.68	7.67
45.	-0.403	-367.	361.	-282.	282.	-6.27	6.28
65.	-1.66	-491.	477.	-293.	291.	-4.47	4.51

Table N-675. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-8.73E-04	-32.6	32.6	-32.6	32.6	-6.53	6.51
15.	-2.34E-02	-94.8	94.8	-95.0	94.7	-6.33	6.32
30.	-0.184	-170.	170.	-171.	170.	-5.68	5.67
45.	-0.601	-210.	210.	-210.	210.	-4.65	4.67
65.	-1.70	-223.	223.	-223.	223.	-3.40	3.45

Table N-676. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.85E-03	-46.9	46.8	-46.9	46.8	-9.38	9.36
15.	5.53E-03	-141.	140.	-141.	140.	-9.38	9.36
30.	1.11E-02	-282.	281.	-282.	281.	-9.38	9.36
45.	1.69E-02	-422.	421.	-422.	421.	-9.38	9.36
65.	2.44E-02	-610.	608.	-610.	608.	-9.38	9.36

Table N-677. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.85E-03	-46.9	46.8	-46.9	46.8	-9.38	9.36
15.	5.52E-03	-141.	140.	-141.	140.	-9.38	9.36
30.	1.11E-02	-282.	281.	-282.	281.	-9.38	9.36
45.	1.70E-02	-422.	421.	-422.	421.	-9.38	9.36
65.	2.45E-02	-610.	608.	-610.	608.	-9.38	9.36

Table N-678. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.105	-47.5	47.6	-47.2	47.3	-9.43	9.48
15.	-3.00	-230.	229.	-228.	227.	-15.0	15.3
30.	-27.9	-1.29E+03	1.29E+03	-1.28E+03	1.28E+03	-41.6	43.5
45.	-118.	-4.56E+03	4.50E+03	-4.30E+03	4.31E+03	-93.0	98.5
65.	-211.	-8.54E+03	8.35E+03	-7.30E+03	7.37E+03	-109.	117.

# TASK 1/ROLL MOTION/MODEL 5514

Table N-679. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-680. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.24E-03	-41.5	41.6	-41.0	41.1	-8.21	8.21
15.	8.30E-02	-184.	185.	-179.	179.	-11.9	12.0
30.	0.809	-997.	1.00E+03	-976.	984.	-32.6	32.8
45.	2.80	-2.31E+03	2.33E+03	-2.28E+03	2.31E+03	-50.8	51.2
65.	4.55	-6.21E+03	6.06E+03	-4.78E+03	4.88E+03	-73.6	75.0

# TASK 1/ROLL MOTION/MODEL 5514

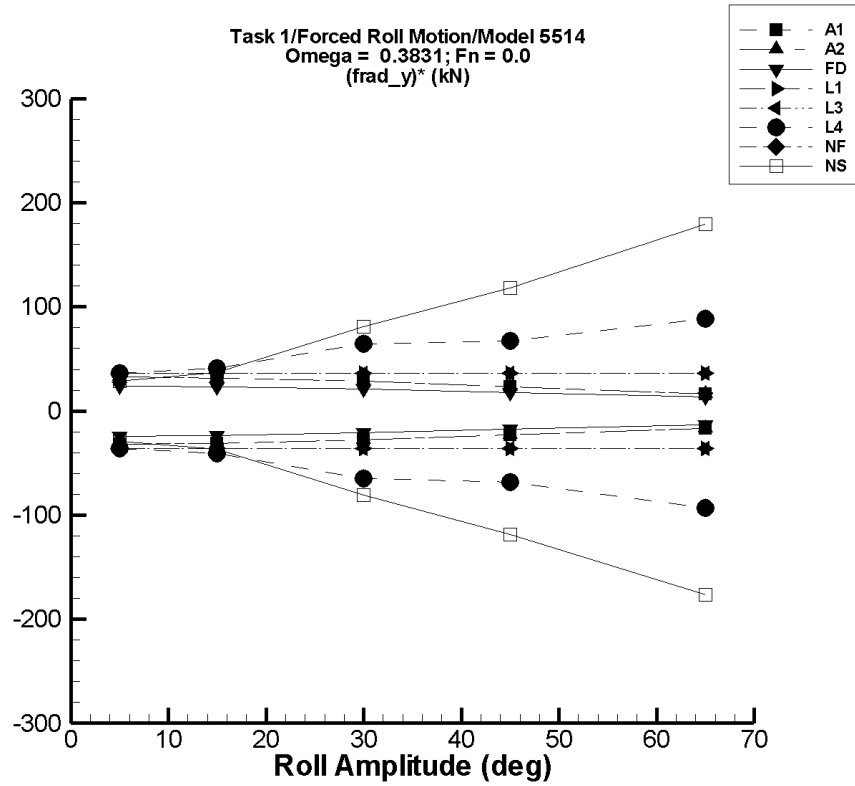


Figure N-86. Minimum and Maximum of  $(F_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-681. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$	$\langle F_y^{\text{rad}} \rangle$	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN/°)</b>	<b>(kN/°)</b>
5.	0.152	-174.	165.	-160.	164.	-32.1	32.7
15.	0.366	-506.	479.	-466.	477.	-31.1	31.7
30.	0.145	-914.	859.	-836.	855.	-27.9	28.5
45.	-1.17	-1.13E+03	1.05E+03	-1.02E+03	1.05E+03	-22.7	23.4
65.	-5.25	-1.09E+03	1.27E+03	-1.08E+03	1.04E+03	-16.6	16.0

Table N-682. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$	$\langle F_y^{\text{rad}} \rangle$	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN)</b>	<b>(kN/°)</b>	<b>(kN/°)</b>
5.	0.152	-174.	165.	-160.	164.	-32.1	32.7
15.	0.366	-506.	479.	-466.	477.	-31.1	31.7
30.	0.145	-914.	859.	-836.	855.	-27.9	28.5
45.	-1.17	-1.13E+03	1.05E+03	-1.02E+03	1.05E+03	-22.7	23.4
65.	-5.25	-1.09E+03	1.27E+03	-1.08E+03	1.04E+03	-16.6	16.0



Table N-683. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
	<b>Mean (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN/°)</b>	<b>Max. (kN/°)</b>
5.	-2.81E-03	-121.	121.	-121.	121.	-24.2	24.2
15.	-7.48E-02	-353.	353.	-352.	352.	-23.4	23.4
30.	-0.584	-634.	634.	-633.	632.	-21.1	21.1
45.	-1.90	-789.	789.	-788.	788.	-17.5	17.5
65.	-5.28	-867.	867.	-868.	860.	-13.3	13.3

Table N-684. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
	<b>Mean (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN/°)</b>	<b>Max. (kN/°)</b>
5.	3.06E-03	-180.	180.	-180.	180.	-35.9	35.9
15.	9.25E-03	-539.	539.	-539.	539.	-35.9	35.9
30.	1.85E-02	-1.08E+03	1.08E+03	-1.08E+03	1.08E+03	-35.9	35.9
45.	2.85E-02	-1.62E+03	1.62E+03	-1.62E+03	1.62E+03	-35.9	35.9
65.	4.07E-02	-2.34E+03	2.34E+03	-2.33E+03	2.33E+03	-35.9	35.9

Table N-685. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.05E-03	-180.	180.	-180.	180.	-35.9	35.9
15.	9.22E-03	-539.	539.	-539.	539.	-35.9	35.9
30.	1.86E-02	-1.08E+03	1.08E+03	-1.08E+03	1.08E+03	-35.9	35.9
45.	2.84E-02	-1.62E+03	1.62E+03	-1.62E+03	1.62E+03	-35.9	35.9
65.	4.10E-02	-2.34E+03	2.34E+03	-2.33E+03	2.33E+03	-35.9	35.9

Table N-686. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-1.21E-02	-181.	181.	-181.	181.	-36.2	36.2
15.	-0.692	-622.	622.	-615.	619.	-40.9	41.3
30.	-7.78	-1.99E+03	1.97E+03	-1.95E+03	1.93E+03	-64.8	64.5
45.	29.2	-3.09E+03	3.08E+03	-3.03E+03	3.05E+03	-68.1	67.1
65.	237.	-7.32E+03	7.10E+03	-5.81E+03	6.00E+03	-93.0	88.7

# TASK 1/ROLL MOTION/MODEL 5514

Table N-687. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-688. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.45E-03	-146.	146.	-144.	144.	-28.9	28.8
15.	-9.69E-02	-564.	563.	-551.	550.	-36.7	36.7
30.	-0.831	-2.48E+03	2.47E+03	-2.43E+03	2.42E+03	-80.9	80.7
45.	-2.52	-5.45E+03	5.44E+03	-5.33E+03	5.31E+03	-118.	118.
65.	-3.67	-1.44E+04	1.43E+04	-1.15E+04	1.17E+04	-176.	179.

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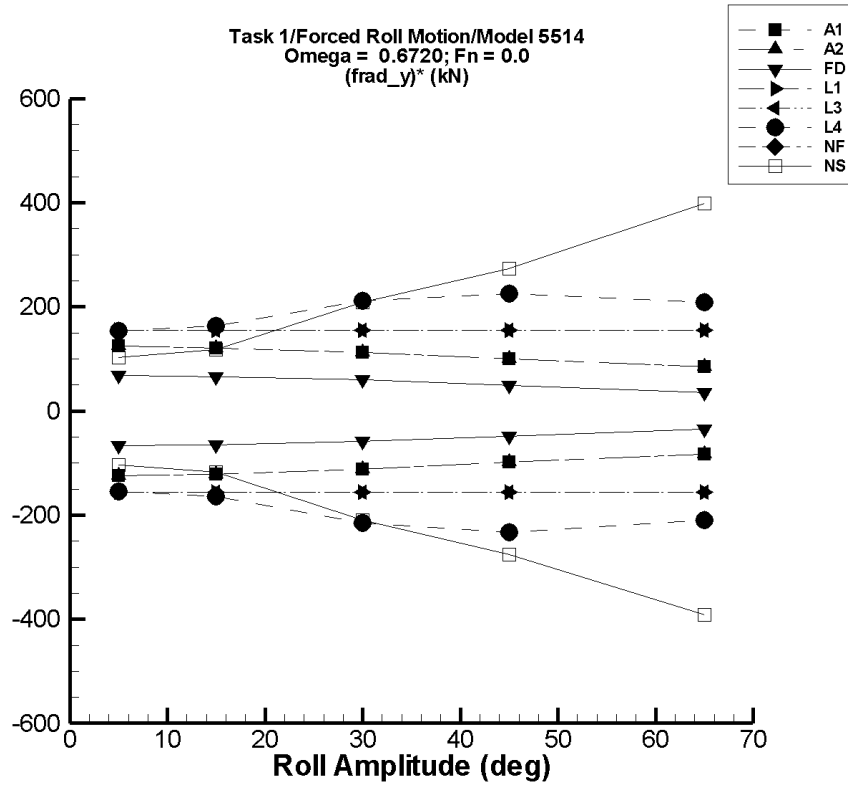


Figure N-87. Minimum and Maximum of  $(F_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

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Table N-689. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.259	-631.	628.	-623.	621.	-125.	124.
15.	-1.51	-1.84E+03	1.84E+03	-1.82E+03	1.82E+03	-121.	121.
30.	-7.84	-3.40E+03	3.39E+03	-3.36E+03	3.35E+03	-112.	112.
45.	-23.2	-4.53E+03	4.52E+03	-4.47E+03	4.46E+03	-98.7	99.6
65.	-62.5	-5.63E+03	5.64E+03	-5.48E+03	5.49E+03	-83.3	85.4

Table N-690. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-0.259	-631.	628.	-623.	621.	-125.	124.
15.	-1.51	-1.84E+03	1.84E+03	-1.82E+03	1.82E+03	-121.	121.
30.	-7.84	-3.40E+03	3.39E+03	-3.36E+03	3.35E+03	-112.	112.
45.	-23.2	-4.53E+03	4.52E+03	-4.47E+03	4.46E+03	-98.7	99.6
65.	-62.5	-5.63E+03	5.64E+03	-5.48E+03	5.49E+03	-83.3	85.4

Table N-691. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	-2.35E-02	-340.	340.	-336.	340.	-67.2	68.0
15.	-0.642	-989.	989.	-978.	990.	-65.2	66.1
30.	-5.03	-1.77E+03	1.77E+03	-1.76E+03	1.78E+03	-58.5	59.5
45.	-16.4	-2.19E+03	2.19E+03	-2.18E+03	2.19E+03	-48.0	49.1
65.	-45.9	-2.32E+03	2.33E+03	-2.27E+03	2.27E+03	-34.2	35.6

Table N-692. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	1.41E-02	-781.	782.	-778.	778.	-156.	156.
15.	4.21E-02	-2.34E+03	2.34E+03	-2.33E+03	2.33E+03	-156.	156.
30.	8.57E-02	-4.69E+03	4.69E+03	-4.67E+03	4.67E+03	-156.	156.
45.	0.130	-7.03E+03	7.03E+03	-7.00E+03	7.00E+03	-156.	156.
65.	0.191	-1.02E+04	1.02E+04	-1.01E+04	1.01E+04	-156.	156.

Table N-693. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.41E-02	-781.	782.	-778.	778.	-156.	156.
15.	4.19E-02	-2.34E+03	2.34E+03	-2.33E+03	2.33E+03	-156.	156.
30.	8.57E-02	-4.69E+03	4.69E+03	-4.67E+03	4.67E+03	-156.	156.
45.	0.130	-7.03E+03	7.03E+03	-7.00E+03	7.00E+03	-156.	156.
65.	0.191	-1.02E+04	1.02E+04	-1.01E+04	1.01E+04	-156.	156.

Table N-694. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-5.86E-02	-785.	784.	-773.	766.	-155.	153.
15.	7.63	-2.51E+03	2.51E+03	-2.46E+03	2.47E+03	-165.	164.
30.	22.2	-6.58E+03	6.61E+03	-6.42E+03	6.35E+03	-215.	211.
45.	269.	-1.06E+04	1.06E+04	-1.02E+04	1.04E+04	-232.	225.
65.	703.	-1.85E+04	1.82E+04	-1.29E+04	1.42E+04	-210.	208.

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Table N-695. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-696. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.274	-521.	520.	-515.	515.	-103.	103.
15.	0.491	-1.80E+03	1.80E+03	-1.77E+03	1.77E+03	-118.	118.
30.	-1.93	-6.39E+03	6.37E+03	-6.28E+03	6.26E+03	-209.	209.
45.	-9.69	-1.27E+04	1.26E+04	-1.24E+04	1.23E+04	-275.	274.
65.	-45.0	-3.21E+04	3.19E+04	-2.55E+04	2.59E+04	-392.	399.



# TASK 1/ROLL MOTION/MODEL 5514

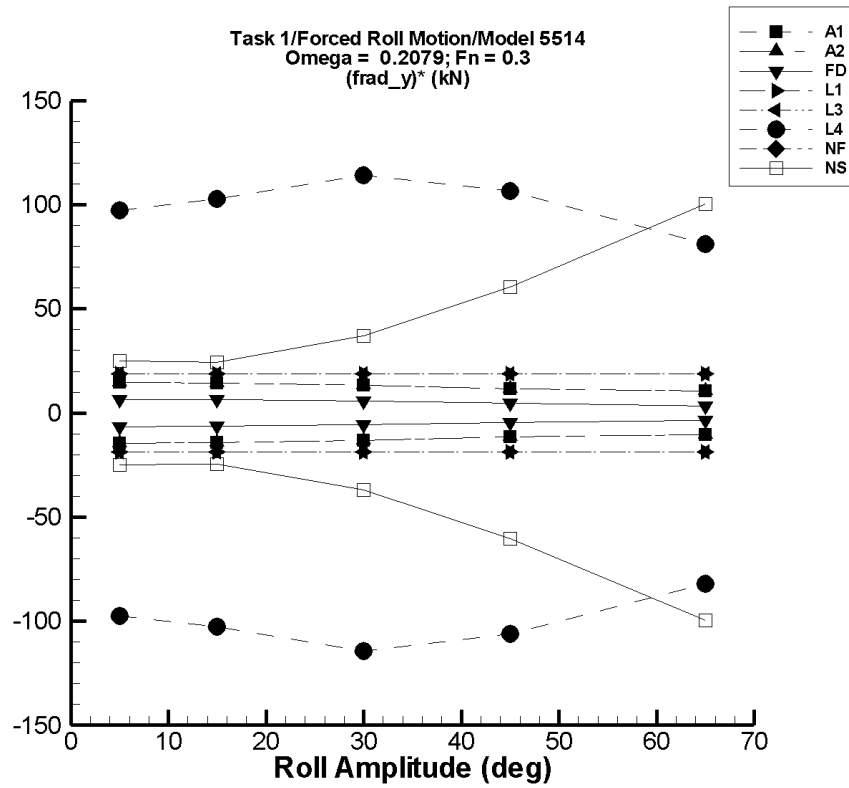


Figure N-88. Minimum and Maximum of  $(F_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-697. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	4.95E-02	-73.7	74.2	-72.5	73.0	-14.5	14.6
15.	0.110	-216.	216.	-212.	213.	-14.1	14.2
30.	-8.76E-02	-404.	404.	-394.	394.	-13.1	13.1
45.	-0.911	-538.	541.	-523.	526.	-11.6	11.7
65.	-3.39	-702.	697.	-689.	684.	-10.5	10.6

Table N-698. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	4.95E-02	-73.7	74.2	-72.5	73.0	-14.5	14.6
15.	0.110	-216.	216.	-212.	213.	-14.1	14.2
30.	-8.76E-02	-404.	404.	-394.	394.	-13.1	13.1
45.	-0.911	-538.	541.	-523.	526.	-11.6	11.7
65.	-3.39	-702.	697.	-689.	684.	-10.5	10.6

Table N-699. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
	<b>Mean (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN/°)</b>	<b>Max. (kN/°)</b>
5.	-8.75E-04	-32.6	32.6	-32.6	32.6	-6.53	6.51
15.	-2.34E-02	-94.8	94.8	-95.0	94.7	-6.33	6.32
30.	-0.184	-170.	170.	-171.	170.	-5.68	5.67
45.	-0.601	-210.	210.	-210.	210.	-4.65	4.67
65.	-1.70	-223.	223.	-223.	223.	-3.40	3.45

Table N-700. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
	<b>Mean (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN)</b>	<b>Max. (kN)</b>	<b>Min. (kN/°)</b>	<b>Max. (kN/°)</b>
5.	-2.98E-02	-93.9	93.9	-93.9	93.8	-18.8	18.8
15.	-3.02E-02	-282.	282.	-282.	281.	-18.8	18.8
30.	-3.10E-02	-563.	563.	-563.	563.	-18.8	18.8
45.	-3.10E-02	-845.	845.	-844.	844.	-18.8	18.8
65.	-3.04E-02	-1.22E+03	1.22E+03	-1.22E+03	1.22E+03	-18.8	18.8

Table N-701. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.49E-02	-93.9	93.8	-93.9	93.8	-18.8	18.8
15.	-4.50E-02	-282.	282.	-282.	281.	-18.8	18.8
30.	-4.55E-02	-563.	563.	-563.	563.	-18.8	18.8
45.	-4.53E-02	-845.	845.	-845.	844.	-18.8	18.8
65.	-4.44E-02	-1.22E+03	1.22E+03	-1.22E+03	1.22E+03	-18.8	18.8

Table N-702. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74	-559.	494.	-493.	482.	-97.7	97.4
15.	-8.33	-1.61E+03	1.60E+03	-1.55E+03	1.53E+03	-103.	103.
30.	-8.66	-3.50E+03	3.46E+03	-3.44E+03	3.41E+03	-114.	114.
45.	-28.5	-5.05E+03	5.10E+03	-4.81E+03	4.77E+03	-106.	107.
65.	10.8	-6.44E+03	6.28E+03	-5.32E+03	5.27E+03	-82.1	81.0

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Table N-703. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-704. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.43E-03	-126.	126.	-124.	124.	-24.9	24.9
15.	5.87E-02	-372.	372.	-367.	367.	-24.4	24.4
30.	0.693	-1.13E+03	1.13E+03	-1.11E+03	1.11E+03	-36.9	37.0
45.	2.31	-2.77E+03	2.78E+03	-2.71E+03	2.72E+03	-60.3	60.5
65.	7.19	-7.69E+03	7.62E+03	-6.47E+03	6.54E+03	-99.7	101.

# TASK 1/ROLL MOTION/MODEL 5514

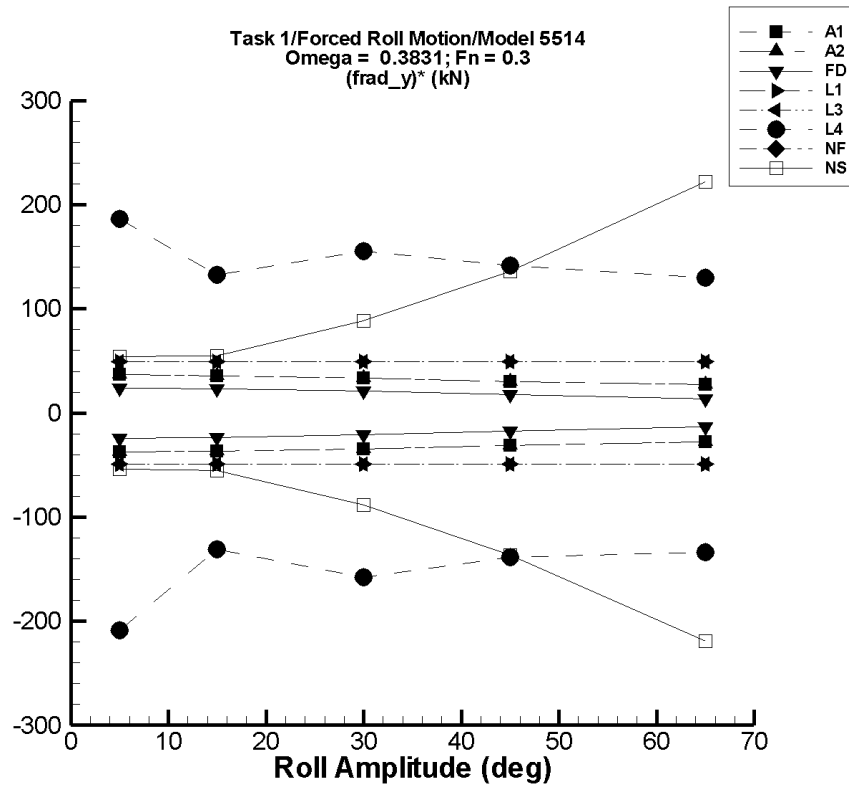


Figure N-89. Minimum and Maximum of  $(F_y^{rad})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

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Table N-705. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.257	-189.	184.	-188.	184.	-37.7	36.7
15.	0.644	-557.	538.	-554.	538.	-36.9	35.8
30.	0.392	-1.04E+03	1.00E+03	-1.04E+03	1.00E+03	-34.6	33.3
45.	-1.59	-1.42E+03	1.43E+03	-1.42E+03	1.35E+03	-31.4	30.0
65.	-7.95	-1.82E+03	1.84E+03	-1.80E+03	1.78E+03	-27.6	27.6

Table N-706. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.257	-189.	184.	-188.	184.	-37.7	36.7
15.	0.644	-557.	538.	-554.	538.	-36.9	35.8
30.	0.392	-1.04E+03	1.00E+03	-1.04E+03	1.00E+03	-34.6	33.3
45.	-1.59	-1.42E+03	1.43E+03	-1.42E+03	1.35E+03	-31.4	30.0
65.	-7.95	-1.82E+03	1.84E+03	-1.80E+03	1.78E+03	-27.6	27.6

TASK 1/ROLL MOTION/MODEL 5514

Table N-707. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.81E-03	-121.	121.	-121.	121.	-24.2	24.2
15.	-7.48E-02	-353.	353.	-352.	352.	-23.4	23.4
30.	-0.584	-634.	634.	-633.	632.	-21.1	21.1
45.	-1.90	-789.	789.	-788.	788.	-17.5	17.5
65.	-5.28	-867.	867.	-868.	860.	-13.3	13.3

Table N-708. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.83E-02	-247.	247.	-246.	246.	-49.3	49.3
15.	-2.84E-02	-740.	740.	-739.	739.	-49.3	49.3
30.	-2.95E-02	-1.48E+03	1.48E+03	-1.48E+03	1.48E+03	-49.3	49.3
45.	-3.15E-02	-2.22E+03	2.22E+03	-2.22E+03	2.22E+03	-49.3	49.3
65.	-3.28E-02	-3.21E+03	3.21E+03	-3.20E+03	3.20E+03	-49.3	49.3



Table N-709. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.47E-02	-247.	247.	-246.	246.	-49.3	49.3
15.	-4.49E-02	-740.	740.	-739.	739.	-49.3	49.3
30.	-4.69E-02	-1.48E+03	1.48E+03	-1.48E+03	1.48E+03	-49.3	49.3
45.	-4.92E-02	-2.22E+03	2.22E+03	-2.22E+03	2.22E+03	-49.3	49.3
65.	-5.33E-02	-3.21E+03	3.21E+03	-3.20E+03	3.20E+03	-49.3	49.3

Table N-710. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.629	-1.11E+03	993.	-1.04E+03	932.	-209.	186.
15.	-11.8	-2.07E+03	2.04E+03	-1.98E+03	1.97E+03	-131.	132.
30.	3.13	-4.84E+03	4.73E+03	-4.73E+03	4.66E+03	-158.	155.
45.	32.7	-7.32E+03	7.13E+03	-6.19E+03	6.40E+03	-138.	142.
65.	233.	-8.97E+03	8.89E+03	-8.47E+03	8.69E+03	-134.	130.

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Table N-711. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
(°)	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-712. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$	$\langle F_y^{\text{rad}} \rangle$	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
(°)	Mean (kN)	Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-1.37E-02	-273.	273.	-271.	271.	-54.1	54.1
15.	-0.200	-835.	836.	-826.	827.	-55.0	55.1
30.	-1.64	-2.70E+03	2.69E+03	-2.66E+03	2.65E+03	-88.6	88.4
45.	-5.72	-6.32E+03	6.30E+03	-6.14E+03	6.13E+03	-136.	136.
65.	-14.0	-1.72E+04	1.71E+04	-1.42E+04	1.44E+04	-219.	222.

# TASK 1/ROLL MOTION/MODEL 5514

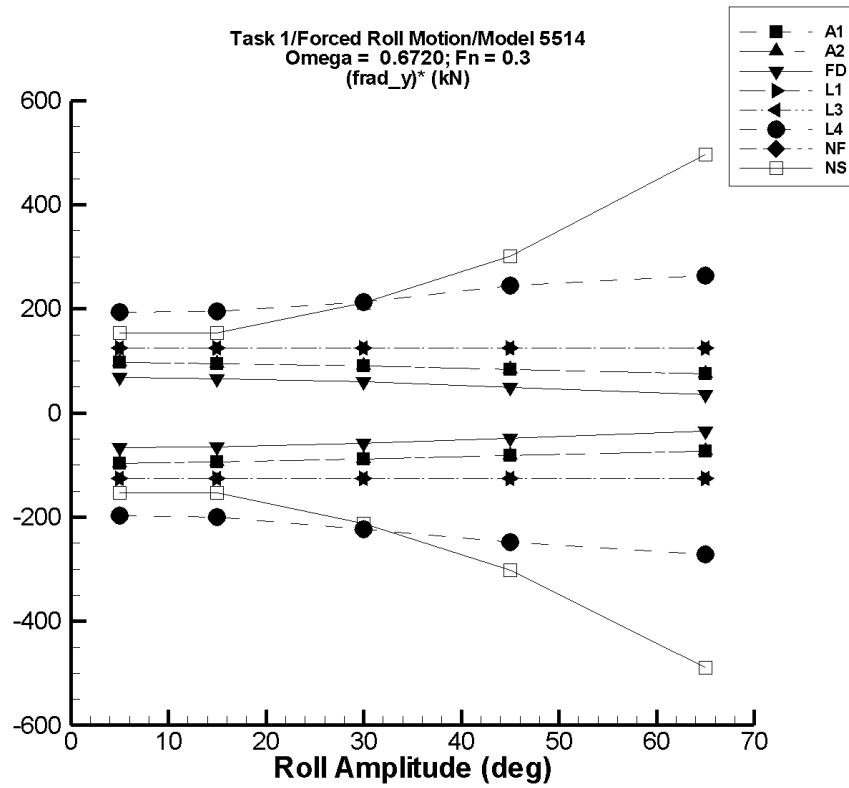


Figure N-90. Minimum and Maximum of  $(F_y^{rad})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-713. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	0.725	-487.	490.	-481.	484.	-96.4	96.6
15.	1.66	-1.43E+03	1.44E+03	-1.42E+03	1.42E+03	-94.4	94.9
30.	-8.18E-02	-2.70E+03	2.73E+03	-2.66E+03	2.69E+03	-88.8	89.7
45.	-8.19	-3.74E+03	3.79E+03	-3.68E+03	3.73E+03	-81.7	83.1
65.	-32.4	-4.93E+03	5.00E+03	-4.81E+03	4.87E+03	-73.5	75.4

Table N-714. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ <b>Mean</b> (kN)	<b>Unfiltered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>F_y^{\text{rad}}</math></b>		<b>Filtered <math>(F_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN)	<b>Max.</b> (kN)	<b>Min.</b> (kN/°)	<b>Max.</b> (kN/°)
5.	0.725	-487.	490.	-481.	484.	-96.4	96.6
15.	1.66	-1.43E+03	1.44E+03	-1.42E+03	1.42E+03	-94.4	94.9
30.	-8.18E-02	-2.70E+03	2.73E+03	-2.66E+03	2.69E+03	-88.8	89.7
45.	-8.19	-3.74E+03	3.79E+03	-3.68E+03	3.73E+03	-81.7	83.1
65.	-32.4	-4.93E+03	5.00E+03	-4.81E+03	4.87E+03	-73.5	75.4

Table N-715. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.35E-02	-340.	340.	-336.	340.	-67.2	68.0
15.	-0.642	-989.	989.	-978.	990.	-65.2	66.1
30.	-5.03	-1.77E+03	1.77E+03	-1.76E+03	1.78E+03	-58.5	59.5
45.	-16.4	-2.19E+03	2.19E+03	-2.18E+03	2.19E+03	-48.0	49.1
65.	-45.9	-2.32E+03	2.33E+03	-2.27E+03	2.27E+03	-34.2	35.6

Table N-716. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-2.70E-02	-629.	629.	-627.	627.	-125.	125.
15.	-2.92E-02	-1.89E+03	1.89E+03	-1.88E+03	1.88E+03	-125.	125.
30.	-3.57E-02	-3.78E+03	3.78E+03	-3.76E+03	3.76E+03	-125.	125.
45.	-4.66E-02	-5.66E+03	5.66E+03	-5.64E+03	5.64E+03	-125.	125.
65.	-6.40E-02	-8.18E+03	8.18E+03	-8.15E+03	8.15E+03	-125.	125.

Table N-717. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.46E-02	-629.	629.	-627.	627.	-125.	125.
15.	-4.59E-02	-1.89E+03	1.89E+03	-1.88E+03	1.88E+03	-125.	125.
30.	-5.03E-02	-3.78E+03	3.78E+03	-3.76E+03	3.76E+03	-125.	125.
45.	-5.76E-02	-5.66E+03	5.66E+03	-5.64E+03	5.64E+03	-125.	125.
65.	-7.03E-02	-8.18E+03	8.18E+03	-8.15E+03	8.15E+03	-125.	125.

Table N-718. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.11	-1.04E+03	1.03E+03	-986.	975.	-198.	194.
15.	14.2	-3.06E+03	3.01E+03	-2.99E+03	2.94E+03	-200.	195.
30.	44.7	-6.81E+03	6.71E+03	-6.64E+03	6.43E+03	-223.	213.
45.	215.	-1.11E+04	1.13E+04	-1.10E+04	1.12E+04	-249.	244.
65.	686.	-2.36E+04	2.27E+04	-1.70E+04	1.78E+04	-272.	264.

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Table N-719. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-720. Minimum and Maximum of  $F_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_y^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_y^{\text{rad}}$		Filtered $F_y^{\text{rad}}$		Filtered $(F_y^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.295	-771.	772.	-765.	766.	-153.	153.
15.	0.484	-2.32E+03	2.32E+03	-2.31E+03	2.31E+03	-154.	154.
30.	-2.40	-6.45E+03	6.44E+03	-6.36E+03	6.34E+03	-212.	212.
45.	-10.7	-1.41E+04	1.40E+04	-1.36E+04	1.35E+04	-302.	301.
65.	-51.3	-3.84E+04	3.82E+04	-3.18E+04	3.22E+04	-489.	496.

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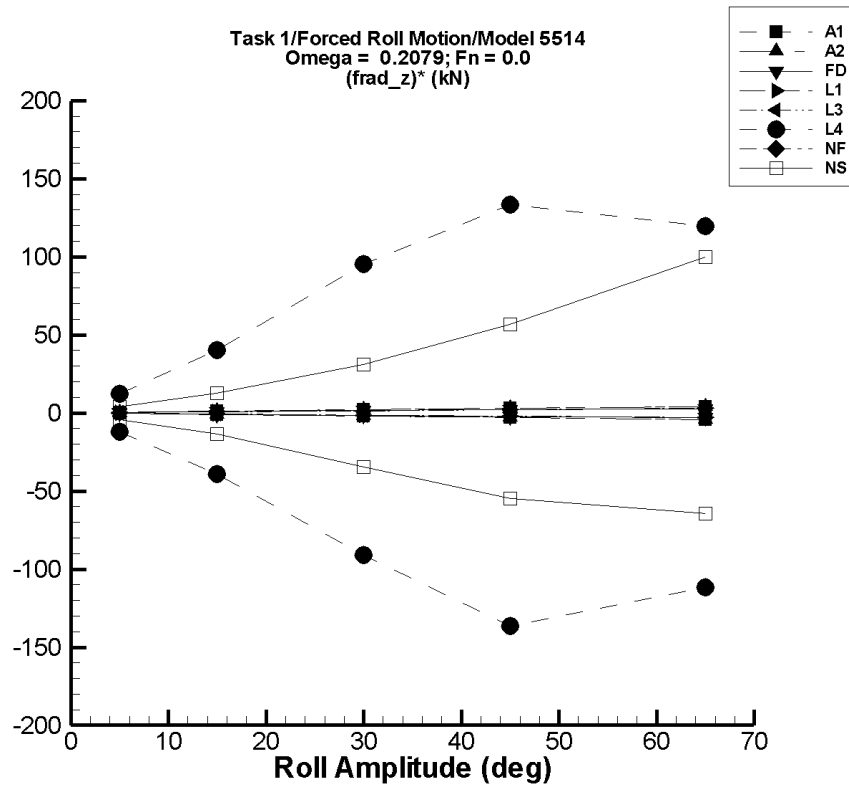


Figure N-91. Minimum and Maximum of  $(F_z^{rad})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.



Table N-721. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.87	-0.117	4.63	-9.30E-03	3.86	-0.377	0.398
15.	16.7	-1.01	41.2	-9.14E-02	34.4	-1.12	1.18
30.	65.2	-4.09	160.	-0.362	133.	-2.18	2.25
45.	140.	-9.22	340.	-0.775	282.	-3.14	3.14
65.	268.	-19.2	637.	-1.45	522.	-4.15	3.90

Table N-722. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.87	-0.117	4.63	-9.30E-03	3.86	-0.377	0.398
15.	16.7	-1.01	41.2	-9.14E-02	34.4	-1.12	1.18
30.	65.2	-4.09	160.	-0.362	133.	-2.18	2.25
45.	140.	-9.22	340.	-0.775	282.	-3.14	3.14
65.	268.	-19.2	637.	-1.45	522.	-4.15	3.90

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Table N-723. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.42	-3.45E-03	2.85	2.02E-03	2.84	-0.284	0.284
15.	12.7	-3.10E-02	25.4	1.89E-02	25.3	-0.846	0.840
30.	49.5	-0.124	98.0	8.47E-02	97.8	-1.65	1.61
45.	107.	-0.279	208.	0.224	208.	-2.37	2.24
65.	204.	-0.583	385.	0.473	385.	-3.13	2.78

Table N-724. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.10	-6.52E-04	2.21	1.06E-03	2.20	-0.220	0.220
15.	9.92	-3.04E-03	19.8	1.26E-02	19.8	-0.661	0.661
30.	39.7	-9.08E-03	79.4	5.37E-02	79.3	-1.32	1.32
45.	89.3	-1.75E-02	179.	0.123	178.	-1.98	1.98
65.	186.	-3.32E-02	373.	0.261	372.	-2.86	2.86

Table N-725. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.10	-6.88E-04	2.21	1.05E-03	2.20	-0.220	0.220
15.	9.92	-3.07E-03	19.8	1.26E-02	19.8	-0.661	0.661
30.	39.7	-8.83E-03	79.4	5.37E-02	79.3	-1.32	1.32
45.	89.3	-1.75E-02	179.	0.123	178.	-1.98	1.98
65.	186.	-3.32E-02	373.	0.261	372.	-2.86	2.86

Table N-726. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.955	-61.0	63.9	-60.5	62.7	-12.3	12.3
15.	6.99	-586.	615.	-582.	612.	-39.3	40.4
30.	16.7	-2.72E+03	2.90E+03	-2.71E+03	2.87E+03	-91.0	95.2
45.	-60.6	-6.28E+03	6.09E+03	-6.19E+03	5.93E+03	-136.	133.
65.	-405.	-8.33E+03	7.80E+03	-7.66E+03	7.38E+03	-112.	120.

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Table N-727. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-728. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.567	-20.6	21.2	-19.9	20.3	-4.10	3.96
15.	5.32	-208.	213.	-198.	198.	-13.5	12.8
30.	26.1	-1.03E+03	1.01E+03	-1.01E+03	955.	-34.5	31.0
45.	95.6	-2.42E+03	2.76E+03	-2.37E+03	2.65E+03	-54.8	56.8
65.	300.	-4.01E+03	7.37E+03	-3.88E+03	6.78E+03	-64.3	99.7

# TASK 1/ROLL MOTION/MODEL 5514

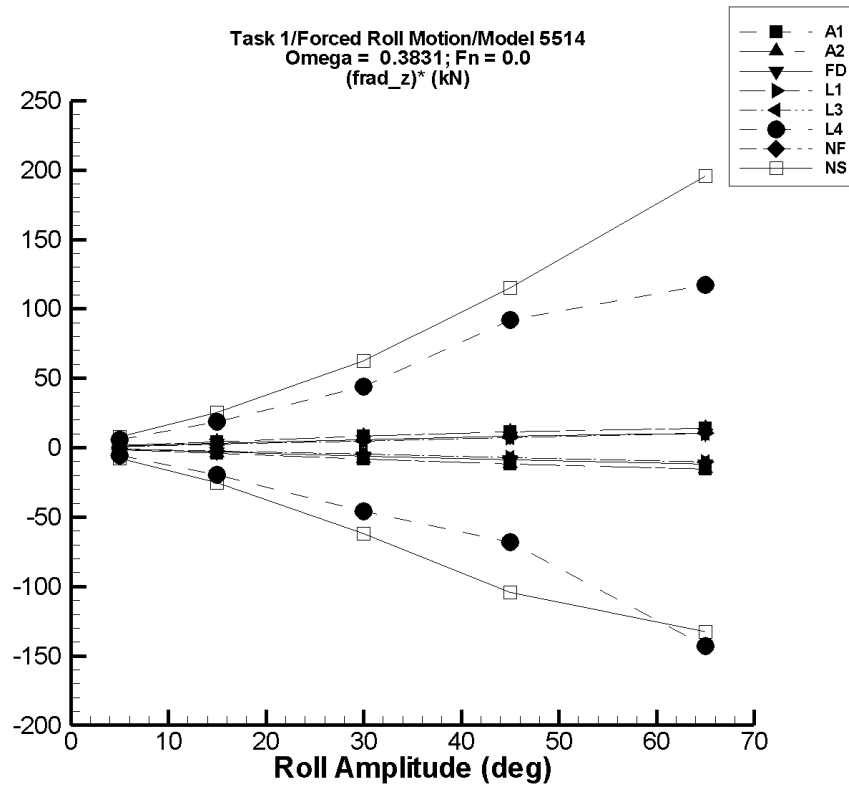


Figure N-92. Minimum and Maximum of  $(F_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

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Table N-729. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_z^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_z^{\text{rad}}$ Max. (kN)	Filtered ( $F_z^{\text{rad}})^*$ Min. (kN/°)	Max. (kN/°)
5.	7.05	-4.22E-03	14.8	-1.24E-02	14.3	-1.41	1.45
15.	62.9	-6.30E-02	132.	-0.137	127.	-4.20	4.28
30.	245.	-0.285	510.	-0.499	492.	-8.19	8.21
45.	528.	-0.666	1.09E+03	-0.845	1.04E+03	-11.8	11.4
65.	1.01E+03	-1.42	2.02E+03	-0.627	1.93E+03	-15.5	14.2

Table N-730. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered Min. (kN)	$F_z^{\text{rad}}$ Max. (kN)	Filtered Min. (kN)	$F_z^{\text{rad}}$ Max. (kN)	Filtered ( $F_z^{\text{rad}})^*$ Min. (kN/°)	Max. (kN/°)
5.	7.05	-4.22E-03	14.8	-1.24E-02	14.3	-1.41	1.45
15.	62.9	-6.30E-02	132.	-0.137	127.	-4.20	4.28
30.	245.	-0.285	510.	-0.499	492.	-8.19	8.21
45.	528.	-0.666	1.09E+03	-0.845	1.04E+03	-11.8	11.4
65.	1.01E+03	-1.42	2.02E+03	-0.627	1.93E+03	-15.5	14.2

Table N-731. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	5.26	-3.90E-02	10.6	-3.63E-02	10.5	-1.06	1.04
15.	47.0	-0.351	94.1	-0.326	93.4	-3.16	3.10
30.	183.	-1.40	364.	-1.29	361.	-6.15	5.93
45.	395.	-3.16	772.	-2.87	767.	-8.84	8.27
65.	755.	-6.59	1.43E+03	-5.83	1.42E+03	-11.7	10.3

Table N-732. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.96	-6.16E-03	7.92	1.51E-02	7.92	-0.788	0.793
15.	35.6	-2.62E-02	71.2	0.165	71.3	-2.36	2.38
30.	142.	-7.40E-02	285.	0.689	285.	-4.72	4.76
45.	320.	-0.147	641.	1.57	642.	-7.09	7.14
65.	669.	-0.280	1.34E+03	3.30	1.34E+03	-10.2	10.3

Table N-733. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.96	-6.14E-03	7.92	1.52E-02	7.92	-0.788	0.793
15.	35.6	-2.60E-02	71.2	0.165	71.3	-2.36	2.38
30.	142.	-7.50E-02	285.	0.689	285.	-4.72	4.76
45.	320.	-0.148	641.	1.57	642.	-7.09	7.14
65.	669.	-0.279	1.34E+03	3.30	1.34E+03	-10.2	10.3

Table N-734. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	3.32	-31.9	36.4	-25.7	32.9	-5.81	5.92
15.	27.1	-292.	317.	-267.	307.	-19.6	18.7
30.	91.6	-1.37E+03	1.46E+03	-1.29E+03	1.41E+03	-46.1	43.9
45.	181.	-2.95E+03	4.41E+03	-2.88E+03	4.31E+03	-68.0	91.8
65.	-312.	-9.77E+03	8.76E+03	-9.59E+03	7.29E+03	-143.	117.



# TASK 1/ROLL MOTION/MODEL 5514

Table N-735. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-736. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.02	-40.2	43.5	-37.4	40.0	-7.89	7.60
15.	16.9	-382.	445.	-366.	397.	-25.5	25.3
30.	67.0	-1.83E+03	2.09E+03	-1.79E+03	1.94E+03	-62.0	62.4
45.	208.	-4.56E+03	5.54E+03	-4.48E+03	5.38E+03	-104.	115.
65.	646.	-8.49E+03	1.45E+04	-7.97E+03	1.34E+04	-132.	196.

# TASK 1/ROLL MOTION/MODEL 5514

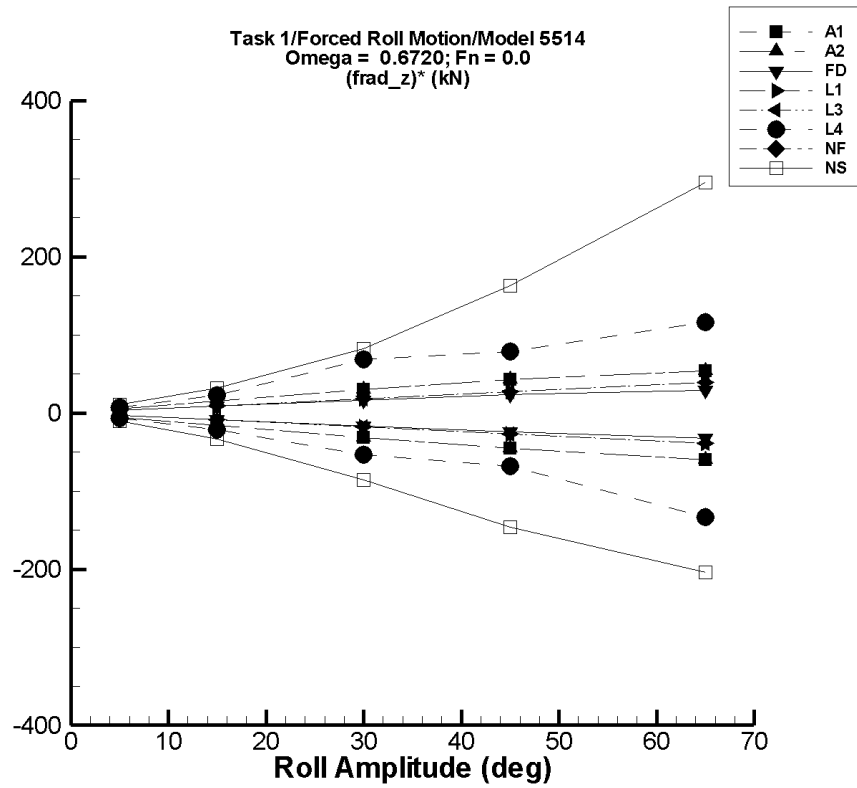


Figure N-93. Minimum and Maximum of  $(F_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-737. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	24.9	-3.47	52.6	-2.09	51.3	-5.39	5.29
15.	222.	-30.9	469.	-18.8	457.	-16.1	15.7
30.	866.	-123.	1.81E+03	-75.0	1.77E+03	-31.4	30.2
45.	1.87E+03	-276.	3.86E+03	-167.	3.78E+03	-45.2	42.4
65.	3.57E+03	-574.	7.20E+03	-343.	7.06E+03	-60.2	53.7

Table N-738. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	24.9	-3.47	52.6	-2.09	51.3	-5.39	5.29
15.	222.	-30.9	469.	-18.8	457.	-16.1	15.7
30.	866.	-123.	1.81E+03	-75.0	1.77E+03	-31.4	30.2
45.	1.87E+03	-276.	3.86E+03	-167.	3.78E+03	-45.2	42.4
65.	3.57E+03	-574.	7.20E+03	-343.	7.06E+03	-60.2	53.7

Table N-739. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	14.8	-3.50E-02	29.7	0.130	29.4	-2.94	2.92
15.	133.	-0.315	265.	1.19	262.	-8.76	8.64
30.	516.	-1.26	1.02E+03	4.95	1.01E+03	-17.0	16.6
45.	1.11E+03	-2.84	2.17E+03	11.9	2.15E+03	-24.4	23.2
65.	2.12E+03	-5.92	4.02E+03	27.6	4.00E+03	-32.2	28.8

Table N-740. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	14.4	-0.734	29.5	-0.478	29.5	-2.97	3.02
15.	129.	-6.53	265.	-4.27	265.	-8.91	9.07
30.	517.	-26.0	1.06E+03	-17.1	1.06E+03	-17.8	18.1
45.	1.16E+03	-58.5	2.39E+03	-38.3	2.39E+03	-26.7	27.2
65.	2.43E+03	-122.	4.98E+03	-80.0	4.98E+03	-38.6	39.3

Table N-741. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	14.4	-0.735	29.5	-0.478	29.5	-2.97	3.02
15.	129.	-6.53	265.	-4.27	265.	-8.91	9.07
30.	517.	-26.0	1.06E+03	-17.1	1.06E+03	-17.8	18.1
45.	1.16E+03	-58.5	2.39E+03	-38.3	2.39E+03	-26.7	27.2
65.	2.43E+03	-122.	4.98E+03	-80.0	4.98E+03	-38.6	39.3

Table N-742. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	12.6	-46.4	63.0	-21.4	48.9	-6.82	7.24
15.	81.9	-331.	481.	-240.	422.	-21.5	22.7
30.	166.	-1.72E+03	2.39E+03	-1.44E+03	2.21E+03	-53.5	68.1
45.	400.	-4.08E+03	5.17E+03	-2.67E+03	3.92E+03	-68.1	78.2
65.	1.42E+03	-8.27E+03	1.18E+04	-7.25E+03	9.00E+03	-133.	117.

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Table N-743. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-744. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.67	-48.5	68.0	-45.9	59.2	-10.1	10.9
15.	32.4	-505.	601.	-471.	515.	-33.5	32.2
30.	92.0	-2.52E+03	2.90E+03	-2.47E+03	2.57E+03	-85.4	82.6
45.	265.	-6.51E+03	7.89E+03	-6.30E+03	7.62E+03	-146.	163.
65.	1.04E+03	-1.39E+04	2.26E+04	-1.22E+04	2.02E+04	-204.	295.

# TASK 1/ROLL MOTION/MODEL 5514

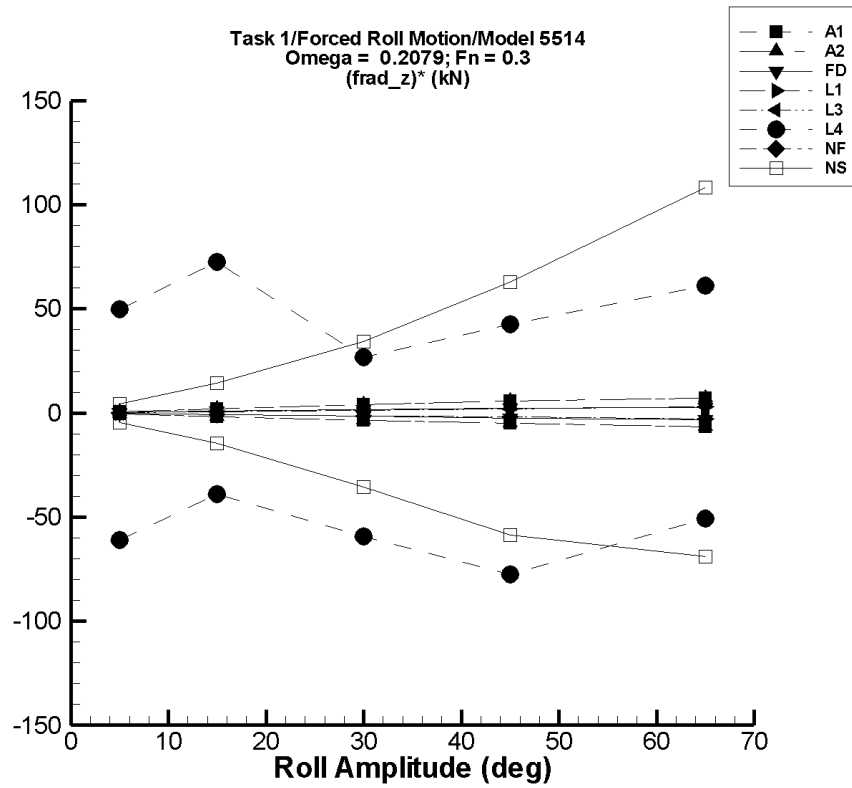


Figure N-94. Minimum and Maximum of  $(F_z^{rad})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-745. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.70	-0.369	6.40	-0.302	6.29	-0.599	0.718
15.	24.1	-3.12	56.7	-2.66	55.7	-1.78	2.11
30.	93.8	-12.7	219.	-10.9	215.	-3.49	4.05
45.	202.	-28.8	466.	-24.7	458.	-5.04	5.68
65.	386.	-60.2	867.	-51.6	852.	-6.73	7.17

Table N-746. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.70	-0.369	6.40	-0.302	6.29	-0.599	0.718
15.	24.1	-3.12	56.7	-2.66	55.7	-1.78	2.11
30.	93.8	-12.7	219.	-10.9	215.	-3.49	4.05
45.	202.	-28.8	466.	-24.7	458.	-5.04	5.68
65.	386.	-60.2	867.	-51.6	852.	-6.73	7.17



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Table N-747. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	1.42	-3.45E-03	2.85	2.02E-03	2.84	-0.284	0.284
15.	12.7	-3.10E-02	25.4	1.89E-02	25.3	-0.846	0.840
30.	49.5	-0.124	98.0	8.47E-02	97.8	-1.65	1.61
45.	107.	-0.279	208.	0.224	208.	-2.37	2.24
65.	204.	-0.583	385.	0.473	385.	-3.13	2.78

Table N-748. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-4.74E+03	-4.74E+03	-4.74E+03	-4.74E+03	-0.267	0.230
15.	-4.73E+03	-4.74E+03	-4.72E+03	-4.74E+03	-4.72E+03	-0.681	0.671
30.	-4.70E+03	-4.74E+03	-4.66E+03	-4.74E+03	-4.66E+03	-1.34	1.34
45.	-4.65E+03	-4.74E+03	-4.56E+03	-4.74E+03	-4.56E+03	-2.01	2.01
65.	-4.56E+03	-4.75E+03	-4.37E+03	-4.75E+03	-4.37E+03	-2.90	2.90

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Table N-749. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-4.74E+03	-4.74E+03	-4.74E+03	-4.74E+03	-0.252	0.232
15.	-4.73E+03	-4.74E+03	-4.72E+03	-4.74E+03	-4.72E+03	-0.676	0.669
30.	-4.70E+03	-4.74E+03	-4.66E+03	-4.74E+03	-4.66E+03	-1.34	1.34
45.	-4.65E+03	-4.74E+03	-4.56E+03	-4.74E+03	-4.56E+03	-2.01	2.01
65.	-4.56E+03	-4.75E+03	-4.37E+03	-4.75E+03	-4.37E+03	-2.90	2.90

Table N-750. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-5.11E+03	-4.37E+03	-5.04E+03	-4.49E+03	-61.1	49.7
15.	-4.76E+03	-5.42E+03	-3.49E+03	-5.34E+03	-3.67E+03	-39.0	72.6
30.	-4.87E+03	-6.81E+03	-3.94E+03	-6.65E+03	-4.06E+03	-59.4	26.8
45.	-4.33E+03	-7.96E+03	-2.28E+03	-7.82E+03	-2.42E+03	-77.4	42.6
65.	-3.81E+03	-7.33E+03	372.	-7.11E+03	166.	-50.8	61.2

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Table N-751. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-752. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	0.722	-24.2	24.5	-22.6	23.0	-4.66	4.46
15.	8.17	-219.	249.	-210.	225.	-14.5	14.5
30.	37.8	-1.05E+03	1.13E+03	-1.03E+03	1.07E+03	-35.7	34.3
45.	134.	-2.54E+03	3.00E+03	-2.51E+03	2.96E+03	-58.8	62.8
65.	380.	-4.21E+03	7.94E+03	-4.11E+03	7.41E+03	-69.1	108.

# TASK 1/ROLL MOTION/MODEL 5514

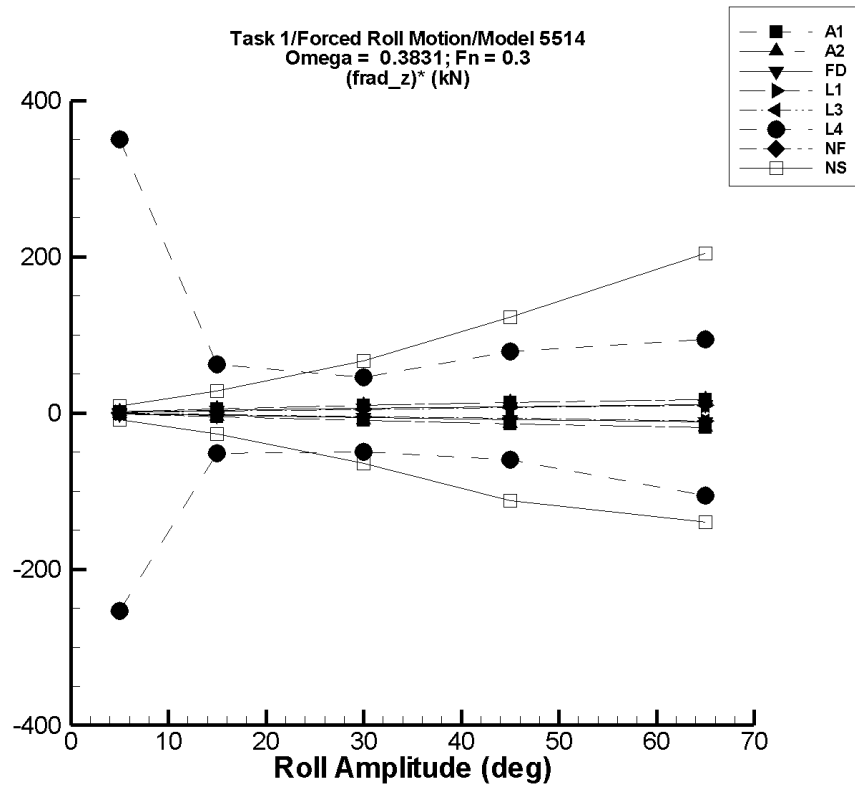


Figure N-95. Minimum and Maximum of  $(F_z^{rad})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-753. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	7.00	-1.34	15.4	-1.17	15.2	-1.63	1.64
15.	62.5	-12.0	137.	-10.4	136.	-4.86	4.90
30.	243.	-47.7	532.	-41.5	527.	-9.50	9.45
45.	524.	-107.	1.13E+03	-92.9	1.12E+03	-13.7	13.3
65.	1.00E+03	-221.	2.11E+03	-192.	2.10E+03	-18.4	16.8

Table N-754. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	7.00	-1.34	15.4	-1.17	15.2	-1.63	1.64
15.	62.5	-12.0	137.	-10.4	136.	-4.86	4.90
30.	243.	-47.7	532.	-41.5	527.	-9.50	9.45
45.	524.	-107.	1.13E+03	-92.9	1.12E+03	-13.7	13.3
65.	1.00E+03	-221.	2.11E+03	-192.	2.10E+03	-18.4	16.8

Table N-755. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	5.26	-3.90E-02	10.6	-3.63E-02	10.5	-1.06	1.04
15.	47.0	-0.351	94.1	-0.326	93.4	-3.16	3.10
30.	183.	-1.40	364.	-1.29	361.	-6.15	5.93
45.	395.	-3.16	772.	-2.87	767.	-8.84	8.27
65.	755.	-6.59	1.43E+03	-5.83	1.42E+03	-11.7	10.3

Table N-756. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-4.74E+03	-4.73E+03	-4.74E+03	-4.73E+03	-0.769	0.790
15.	-4.71E+03	-4.74E+03	-4.67E+03	-4.74E+03	-4.67E+03	-2.31	2.31
30.	-4.61E+03	-4.75E+03	-4.47E+03	-4.75E+03	-4.47E+03	-4.61	4.62
45.	-4.45E+03	-4.76E+03	-4.14E+03	-4.76E+03	-4.14E+03	-6.91	6.92
65.	-4.13E+03	-4.78E+03	-3.48E+03	-4.78E+03	-3.48E+03	-9.99	10.0

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Table N-757. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-4.74E+03	-4.73E+03	-4.74E+03	-4.73E+03	-0.771	0.788
15.	-4.71E+03	-4.74E+03	-4.67E+03	-4.74E+03	-4.67E+03	-2.31	2.31
30.	-4.61E+03	-4.75E+03	-4.47E+03	-4.75E+03	-4.47E+03	-4.61	4.62
45.	-4.45E+03	-4.76E+03	-4.14E+03	-4.76E+03	-4.14E+03	-6.91	6.92
65.	-4.13E+03	-4.78E+03	-3.48E+03	-4.78E+03	-3.48E+03	-9.99	10.0

Table N-758. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-6.05E+03	-2.82E+03	-6.01E+03	-2.99E+03	-254.	350.
15.	-4.83E+03	-5.75E+03	-3.76E+03	-5.61E+03	-3.90E+03	-51.9	62.4
30.	-4.80E+03	-6.47E+03	-3.32E+03	-6.30E+03	-3.44E+03	-49.8	45.3
45.	-4.31E+03	-7.54E+03	-218.	-6.99E+03	-772.	-59.5	78.6
65.	-4.03E+03	-1.11E+04	3.77E+03	-1.09E+04	2.08E+03	-106.	94.0

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Table N-759. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-760. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	2.27	-46.0	48.8	-42.1	45.1	-8.88	8.56
15.	20.9	-401.	496.	-389.	442.	-27.3	28.1
30.	83.8	-1.87E+03	2.25E+03	-1.84E+03	2.09E+03	-64.1	67.0
45.	268.	-4.86E+03	5.88E+03	-4.77E+03	5.77E+03	-112.	122.
65.	816.	-8.79E+03	1.53E+04	-8.29E+03	1.41E+04	-140.	204.



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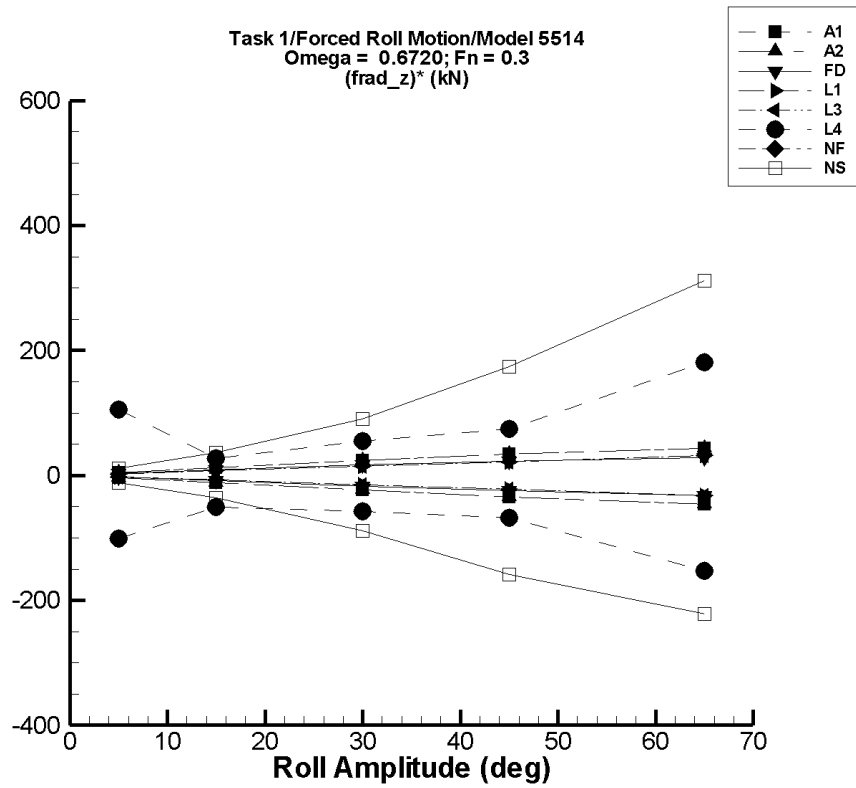


Figure N-96. Minimum and Maximum of  $(F_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-761. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	16.3	-5.04	38.2	-4.02	37.1	-4.06	4.17
15.	145.	-45.9	340.	-35.6	331.	-12.0	12.4
30.	565.	-183.	1.32E+03	-141.	1.28E+03	-23.5	23.9
45.	1.22E+03	-410.	2.82E+03	-314.	2.75E+03	-34.1	34.0
65.	2.33E+03	-846.	5.31E+03	-645.	5.18E+03	-45.8	43.9

Table N-762. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	16.3	-5.04	38.2	-4.02	37.1	-4.06	4.17
15.	145.	-45.9	340.	-35.6	331.	-12.0	12.4
30.	565.	-183.	1.32E+03	-141.	1.28E+03	-23.5	23.9
45.	1.22E+03	-410.	2.82E+03	-314.	2.75E+03	-34.1	34.0
65.	2.33E+03	-846.	5.31E+03	-645.	5.18E+03	-45.8	43.9

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Table N-763. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	14.8	-3.50E-02	29.7	0.130	29.4	-2.94	2.92
15.	133.	-0.315	265.	1.19	262.	-8.76	8.64
30.	516.	-1.26	1.02E+03	4.95	1.01E+03	-17.0	16.6
45.	1.11E+03	-2.84	2.17E+03	11.9	2.15E+03	-24.4	23.2
65.	2.12E+03	-5.92	4.02E+03	27.6	4.00E+03	-32.2	28.8

Table N-764. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.73E+03	-4.74E+03	-4.72E+03	-4.74E+03	-4.72E+03	-2.46	2.44
15.	-4.65E+03	-4.76E+03	-4.54E+03	-4.76E+03	-4.54E+03	-7.34	7.35
30.	-4.37E+03	-4.82E+03	-3.93E+03	-4.81E+03	-3.93E+03	-14.7	14.7
45.	-3.91E+03	-4.92E+03	-2.91E+03	-4.90E+03	-2.92E+03	-22.0	22.1
65.	-3.02E+03	-5.12E+03	-916.	-5.08E+03	-945.	-31.8	31.9

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Table N-765. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.73E+03	-4.74E+03	-4.72E+03	-4.74E+03	-4.72E+03	-2.45	2.45
15.	-4.65E+03	-4.76E+03	-4.54E+03	-4.76E+03	-4.54E+03	-7.33	7.35
30.	-4.37E+03	-4.82E+03	-3.93E+03	-4.81E+03	-3.93E+03	-14.7	14.7
45.	-3.91E+03	-4.92E+03	-2.91E+03	-4.90E+03	-2.92E+03	-22.0	22.1
65.	-3.02E+03	-5.12E+03	-916.	-5.08E+03	-945.	-31.8	31.9

Table N-766. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	-4.74E+03	-5.28E+03	-4.14E+03	-5.25E+03	-4.21E+03	-102.	105.
15.	-4.89E+03	-5.99E+03	-4.31E+03	-5.65E+03	-4.47E+03	-50.6	27.7
30.	-5.03E+03	-7.15E+03	-3.07E+03	-6.77E+03	-3.37E+03	-57.9	55.4
45.	-5.07E+03	-8.64E+03	-898.	-8.15E+03	-1.74E+03	-68.3	74.1
65.	-4.67E+03	-1.53E+04	8.99E+03	-1.46E+04	7.06E+03	-153.	181.

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Table N-767. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-768. Minimum and Maximum of  $F_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle F_z^{\text{rad}} \rangle$ Mean (kN)	Unfiltered $F_z^{\text{rad}}$		Filtered $F_z^{\text{rad}}$		Filtered $(F_z^{\text{rad}})^*$	
		Min. (kN)	Max. (kN)	Min. (kN)	Max. (kN)	Min. (kN/°)	Max. (kN/°)
5.	4.17	-60.3	70.5	-54.5	61.8	-11.7	11.5
15.	31.1	-543.	686.	-513.	585.	-36.3	36.9
30.	96.8	-2.60E+03	3.16E+03	-2.55E+03	2.82E+03	-88.3	90.8
45.	330.	-7.03E+03	8.51E+03	-6.81E+03	8.19E+03	-159.	175.
65.	1.27E+03	-1.47E+04	2.40E+04	-1.31E+04	2.15E+04	-221.	312.

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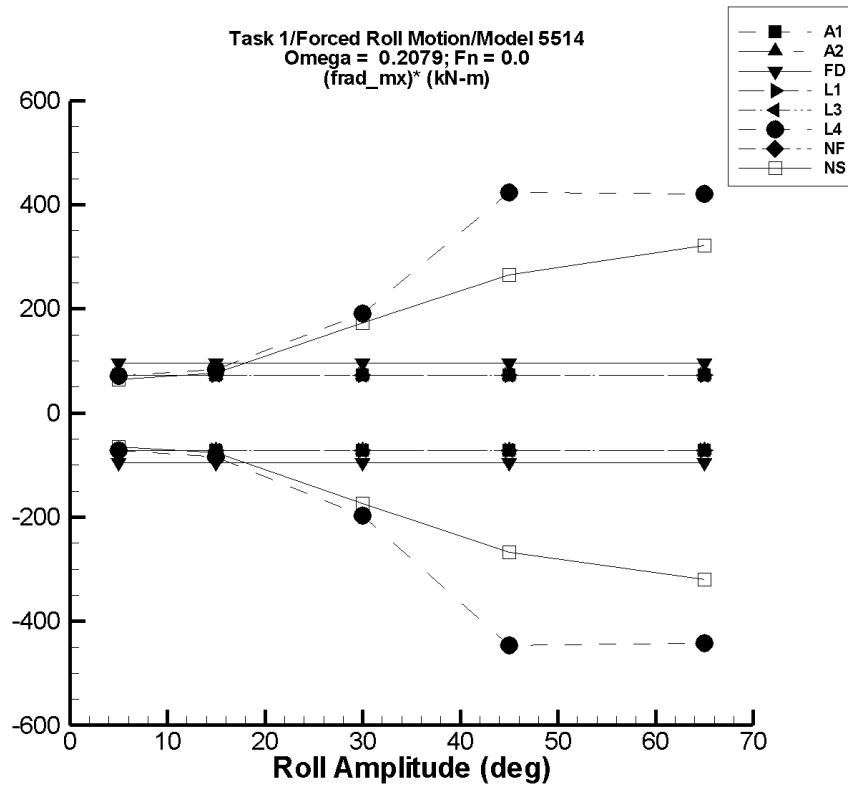


Figure N-97. Minimum and Maximum of  $(M_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-769. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-0.373	-371.	372.	-360.	361.	-71.9	72.3
15.	-1.12	-1.11E+03	1.12E+03	-1.08E+03	1.08E+03	-71.9	72.3
30.	-2.24	-2.23E+03	2.23E+03	-2.16E+03	2.17E+03	-71.9	72.3
45.	-3.36	-3.34E+03	3.35E+03	-3.24E+03	3.25E+03	-71.9	72.3
65.	-4.85	-4.82E+03	4.83E+03	-4.68E+03	4.69E+03	-71.9	72.3

Table N-770. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-0.373	-371.	372.	-360.	361.	-71.9	72.3
15.	-1.12	-1.11E+03	1.12E+03	-1.08E+03	1.08E+03	-71.9	72.3
30.	-2.24	-2.23E+03	2.23E+03	-2.16E+03	2.17E+03	-71.9	72.3
45.	-3.36	-3.34E+03	3.35E+03	-3.24E+03	3.25E+03	-71.9	72.3
65.	-4.85	-4.82E+03	4.83E+03	-4.68E+03	4.69E+03	-71.9	72.3

Table N-771. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.86E-05	-479.	479.	-479.	479.	-95.7	95.7
15.	-7.87E-05	-1.44E+03	1.44E+03	-1.44E+03	1.44E+03	-95.7	95.7
30.	-3.93E-04	-2.87E+03	2.87E+03	-2.87E+03	2.87E+03	-95.7	95.7
45.	-6.63E-04	-4.31E+03	4.31E+03	-4.31E+03	4.31E+03	-95.7	95.7
65.	-1.23E-03	-6.23E+03	6.23E+03	-6.22E+03	6.22E+03	-95.7	95.7

Table N-772. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	5.51E-03	-359.	360.	-359.	360.	-71.8	71.9
15.	1.66E-02	-1.08E+03	1.08E+03	-1.08E+03	1.08E+03	-71.8	71.9
30.	3.38E-02	-2.16E+03	2.16E+03	-2.15E+03	2.16E+03	-71.8	71.9
45.	5.12E-02	-3.23E+03	3.24E+03	-3.23E+03	3.24E+03	-71.8	71.9
65.	7.56E-02	-4.67E+03	4.68E+03	-4.67E+03	4.67E+03	-71.8	71.9



Table N-773. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	5.49E-03	-359.	360.	-359.	360.	-71.8	71.9
15.	1.66E-02	-1.08E+03	1.08E+03	-1.08E+03	1.08E+03	-71.8	71.9
30.	3.39E-02	-2.16E+03	2.16E+03	-2.15E+03	2.16E+03	-71.8	71.9
45.	5.11E-02	-3.23E+03	3.24E+03	-3.23E+03	3.24E+03	-71.8	71.9
65.	7.55E-02	-4.67E+03	4.68E+03	-4.67E+03	4.67E+03	-71.8	71.9

Table N-774. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	0.182	-358.	358.	-358.	358.	-71.6	71.6
15.	7.30	-1.28E+03	1.28E+03	-1.26E+03	1.27E+03	-84.8	84.1
30.	92.3	-5.90E+03	5.91E+03	-5.83E+03	5.81E+03	-197.	191.
45.	357.	-2.12E+04	2.12E+04	-1.97E+04	1.94E+04	-446.	424.
65.	224.	-3.58E+04	3.51E+04	-2.86E+04	2.76E+04	-443.	421.

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Table N-775. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-776. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.02E-02	-326.	326.	-323.	323.	-64.6	64.6
15.	-0.269	-1.17E+03	1.17E+03	-1.15E+03	1.14E+03	-76.4	76.3
30.	-3.14	-5.33E+03	5.30E+03	-5.23E+03	5.20E+03	-174.	173.
45.	-11.8	-1.22E+04	1.21E+04	-1.21E+04	1.19E+04	-268.	266.
65.	-0.894	-2.57E+04	2.64E+04	-2.07E+04	2.09E+04	-319.	322.

# TASK 1/ROLL MOTION/MODEL 5514

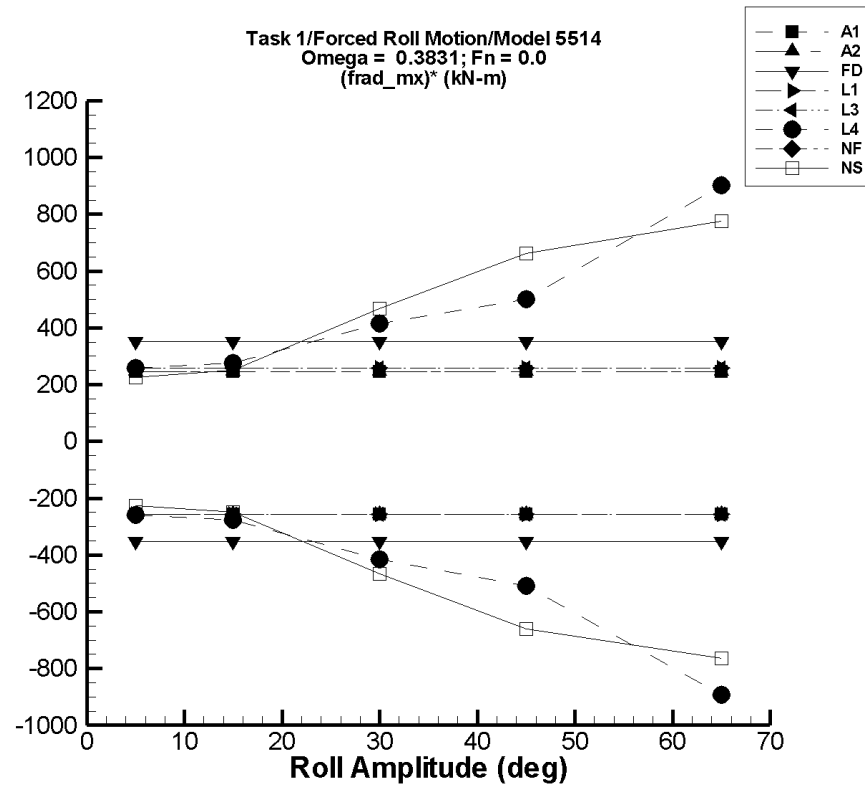


Figure N-98. Minimum and Maximum of  $(M_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-777. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.74	-1.29E+03	1.25E+03	-1.28E+03	1.23E+03	-257.	245.
15.	-5.21	-3.88E+03	3.74E+03	-3.85E+03	3.67E+03	-256.	245.
30.	-10.4	-7.75E+03	7.48E+03	-7.71E+03	7.35E+03	-256.	245.
45.	-15.6	-1.16E+04	1.12E+04	-1.16E+04	1.10E+04	-256.	245.
65.	-22.6	-1.68E+04	1.62E+04	-1.67E+04	1.59E+04	-256.	245.

Table N-778. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.74	-1.29E+03	1.25E+03	-1.28E+03	1.23E+03	-257.	245.
15.	-5.21	-3.88E+03	3.74E+03	-3.85E+03	3.67E+03	-256.	245.
30.	-10.4	-7.75E+03	7.48E+03	-7.71E+03	7.35E+03	-256.	245.
45.	-15.6	-1.16E+04	1.12E+04	-1.16E+04	1.10E+04	-256.	245.
65.	-22.6	-1.68E+04	1.62E+04	-1.67E+04	1.59E+04	-256.	245.

Table N-779. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	4.31E-04	-1.77E+03	1.77E+03	-1.76E+03	1.76E+03	-353.	353.
15.	1.24E-03	-5.31E+03	5.31E+03	-5.29E+03	5.29E+03	-353.	353.
30.	2.22E-03	-1.06E+04	1.06E+04	-1.06E+04	1.06E+04	-353.	353.
45.	3.12E-03	-1.59E+04	1.59E+04	-1.59E+04	1.59E+04	-353.	353.
65.	3.75E-03	-2.30E+04	2.30E+04	-2.29E+04	2.29E+04	-353.	353.

Table N-780. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.32E-03	-1.29E+03	1.29E+03	-1.29E+03	1.29E+03	-258.	258.
15.	-2.67E-02	-3.87E+03	3.87E+03	-3.87E+03	3.87E+03	-258.	258.
30.	-5.09E-02	-7.74E+03	7.74E+03	-7.73E+03	7.73E+03	-258.	258.
45.	-7.34E-02	-1.16E+04	1.16E+04	-1.16E+04	1.16E+04	-258.	258.
65.	-9.77E-02	-1.68E+04	1.68E+04	-1.68E+04	1.68E+04	-258.	258.

Table N-781. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.36E-03	-1.29E+03	1.29E+03	-1.29E+03	1.29E+03	-258.	258.
15.	-2.67E-02	-3.87E+03	3.87E+03	-3.87E+03	3.87E+03	-258.	258.
30.	-5.12E-02	-7.74E+03	7.74E+03	-7.73E+03	7.73E+03	-258.	258.
45.	-7.33E-02	-1.16E+04	1.16E+04	-1.16E+04	1.16E+04	-258.	258.
65.	-9.76E-02	-1.68E+04	1.68E+04	-1.68E+04	1.68E+04	-258.	258.

Table N-782. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.439	-1.30E+03	1.29E+03	-1.29E+03	1.29E+03	-259.	259.
15.	-5.17	-4.19E+03	4.19E+03	-4.15E+03	4.14E+03	-277.	277.
30.	-49.0	-1.29E+04	1.29E+04	-1.25E+04	1.24E+04	-416.	415.
45.	-436.	-2.42E+04	2.43E+04	-2.34E+04	2.21E+04	-510.	501.
65.	-1.08E+03	-6.04E+04	5.97E+04	-5.91E+04	5.75E+04	-893.	901.

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Table N-783. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-784. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	2.27E-02	-1.14E+03	1.14E+03	-1.13E+03	1.13E+03	-226.	226.
15.	0.332	-3.80E+03	3.81E+03	-3.74E+03	3.75E+03	-249.	250.
30.	3.32	-1.42E+04	1.42E+04	-1.40E+04	1.40E+04	-465.	467.
45.	10.3	-3.01E+04	3.02E+04	-2.97E+04	2.98E+04	-660.	661.
65.	52.4	-6.02E+04	6.09E+04	-4.97E+04	5.04E+04	-765.	775.

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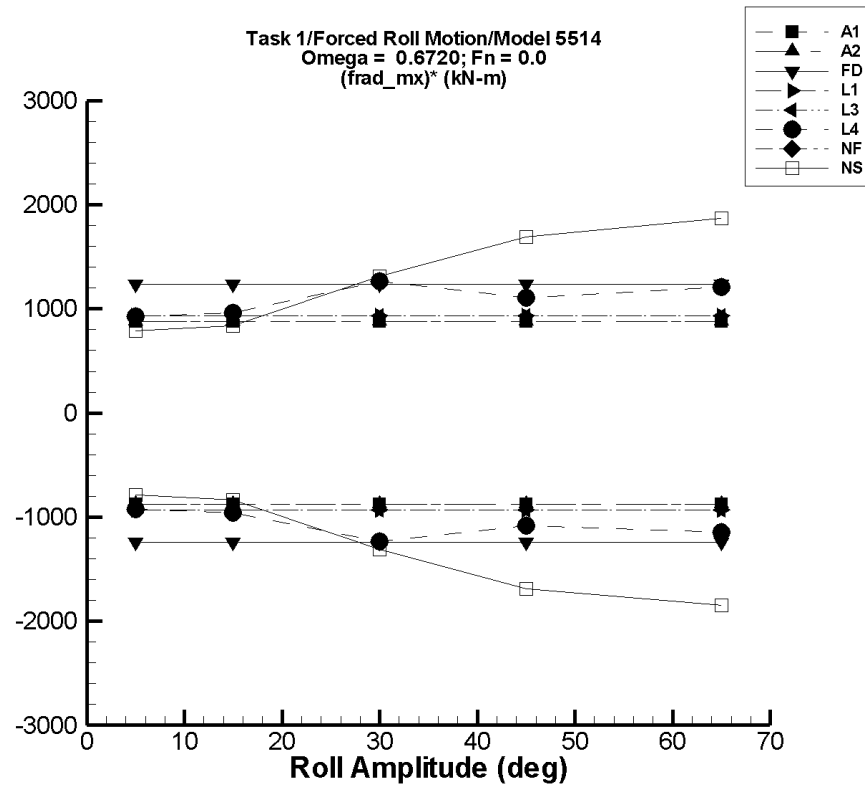


Figure N-99. Minimum and Maximum of  $(M_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.



Table N-785. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-2.33	-4.44E+03	4.46E+03	-4.38E+03	4.40E+03	-876.	881.
15.	-6.99	-1.33E+04	1.34E+04	-1.31E+04	1.32E+04	-876.	881.
30.	-14.0	-2.66E+04	2.67E+04	-2.63E+04	2.64E+04	-876.	881.
45.	-21.0	-3.99E+04	4.01E+04	-3.94E+04	3.96E+04	-876.	881.
65.	-30.3	-5.76E+04	5.79E+04	-5.70E+04	5.72E+04	-876.	881.

Table N-786. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-2.33	-4.44E+03	4.46E+03	-4.38E+03	4.40E+03	-876.	881.
15.	-6.99	-1.33E+04	1.34E+04	-1.31E+04	1.32E+04	-876.	881.
30.	-14.0	-2.66E+04	2.67E+04	-2.63E+04	2.64E+04	-876.	881.
45.	-21.0	-3.99E+04	4.01E+04	-3.94E+04	3.96E+04	-876.	881.
65.	-30.3	-5.76E+04	5.79E+04	-5.70E+04	5.72E+04	-876.	881.

Table N-787. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.14E-02	-6.27E+03	6.27E+03	-6.19E+03	6.20E+03	-1.24E+03	1.24E+03
15.	-3.53E-02	-1.88E+04	1.88E+04	-1.86E+04	1.86E+04	-1.24E+03	1.24E+03
30.	-6.82E-02	-3.76E+04	3.76E+04	-3.72E+04	3.72E+04	-1.24E+03	1.24E+03
45.	-0.104	-5.64E+04	5.64E+04	-5.57E+04	5.58E+04	-1.24E+03	1.24E+03
65.	-0.148	-8.15E+04	8.15E+04	-8.05E+04	8.05E+04	-1.24E+03	1.24E+03

Table N-788. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.45E-02	-4.67E+03	4.67E+03	-4.65E+03	4.65E+03	-930.	931.
15.	4.62E-02	-1.40E+04	1.40E+04	-1.40E+04	1.40E+04	-930.	931.
30.	0.102	-2.80E+04	2.80E+04	-2.79E+04	2.79E+04	-930.	931.
45.	0.157	-4.20E+04	4.21E+04	-4.19E+04	4.19E+04	-930.	931.
65.	0.235	-6.07E+04	6.07E+04	-6.05E+04	6.05E+04	-930.	931.

Table N-789. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	1.45E-02	-4.67E+03	4.67E+03	-4.65E+03	4.65E+03	-930.	931.
15.	4.60E-02	-1.40E+04	1.40E+04	-1.40E+04	1.40E+04	-930.	931.
30.	0.102	-2.80E+04	2.80E+04	-2.79E+04	2.79E+04	-930.	931.
45.	0.158	-4.20E+04	4.21E+04	-4.19E+04	4.19E+04	-930.	931.
65.	0.235	-6.07E+04	6.07E+04	-6.05E+04	6.05E+04	-930.	931.

Table N-790. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.89	-4.69E+03	4.69E+03	-4.65E+03	4.61E+03	-927.	925.
15.	-121.	-1.48E+04	1.48E+04	-1.45E+04	1.43E+04	-960.	960.
30.	-477.	-3.94E+04	3.93E+04	-3.74E+04	3.75E+04	-1.23E+03	1.27E+03
45.	-1.66E+03	-5.61E+04	5.57E+04	-5.03E+04	4.80E+04	-1.08E+03	1.10E+03
65.	-3.46E+03	-8.54E+04	8.33E+04	-7.77E+04	7.51E+04	-1.14E+03	1.21E+03

# TASK 1/ROLL MOTION/MODEL 5514

Table N-791. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-792. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.850	-3.98E+03	3.98E+03	-3.94E+03	3.94E+03	-788.	788.
15.	-1.48	-1.27E+04	1.28E+04	-1.26E+04	1.26E+04	-837.	838.
30.	8.36	-3.99E+04	4.00E+04	-3.93E+04	3.94E+04	-1.31E+03	1.31E+03
45.	41.6	-7.71E+04	7.74E+04	-7.58E+04	7.61E+04	-1.69E+03	1.69E+03
65.	333.	-1.32E+05	1.37E+05	-1.20E+05	1.22E+05	-1.84E+03	1.87E+03

# TASK 1/ROLL MOTION/MODEL 5514

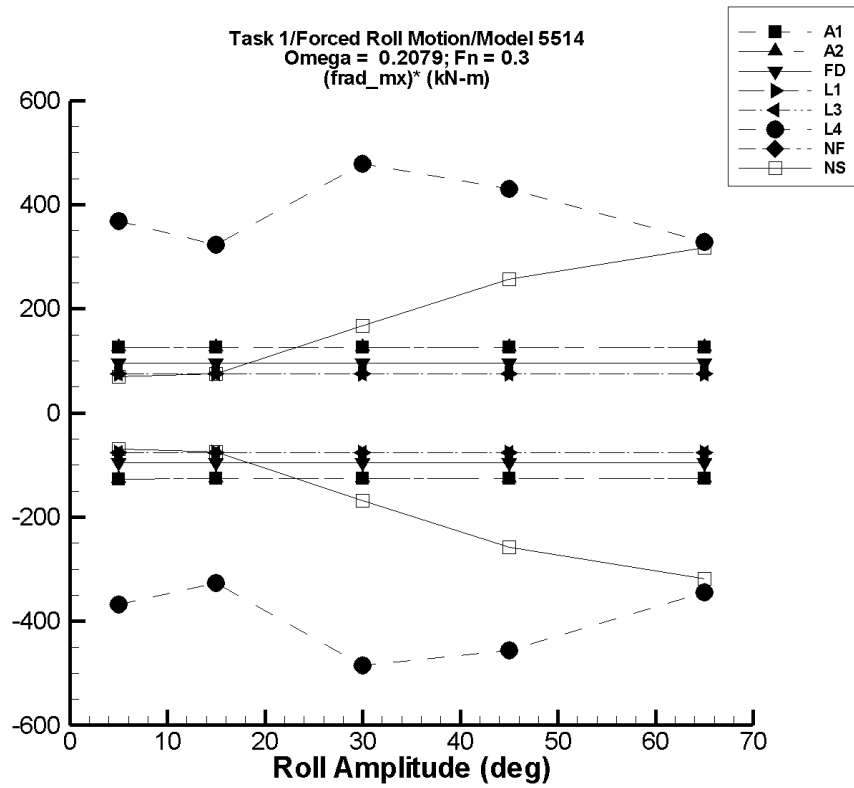


Figure N-100. Minimum and Maximum of  $(M_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

Table N-793. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.295	-651.	652.	-632.	633.	-126.	127.
15.	-0.885	-1.95E+03	1.96E+03	-1.90E+03	1.90E+03	-126.	127.
30.	-1.77	-3.91E+03	3.91E+03	-3.79E+03	3.80E+03	-126.	127.
45.	-2.66	-5.86E+03	5.87E+03	-5.69E+03	5.70E+03	-126.	127.
65.	-3.84	-8.46E+03	8.48E+03	-8.22E+03	8.23E+03	-126.	127.

Table N-794. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.295	-651.	652.	-632.	633.	-126.	127.
15.	-0.885	-1.95E+03	1.96E+03	-1.90E+03	1.90E+03	-126.	127.
30.	-1.77	-3.91E+03	3.91E+03	-3.79E+03	3.80E+03	-126.	127.
45.	-2.66	-5.86E+03	5.87E+03	-5.69E+03	5.70E+03	-126.	127.
65.	-3.84	-8.46E+03	8.48E+03	-8.22E+03	8.23E+03	-126.	127.

Table N-795. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	Filtered $(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-5.32E-05	-479.	479.	-479.	479.	-95.7	95.7
15.	-7.87E-05	-1.44E+03	1.44E+03	-1.44E+03	1.44E+03	-95.7	95.7
30.	-3.93E-04	-2.87E+03	2.87E+03	-2.87E+03	2.87E+03	-95.7	95.7
45.	-6.63E-04	-4.31E+03	4.31E+03	-4.31E+03	4.31E+03	-95.7	95.7
65.	-1.23E-03	-6.23E+03	6.23E+03	-6.22E+03	6.22E+03	-95.7	95.7

Table N-796. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	Filtered $(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	0.170	-379.	380.	-379.	380.	-75.8	75.9
15.	0.167	-1.14E+03	1.14E+03	-1.14E+03	1.14E+03	-75.8	75.9
30.	0.166	-2.28E+03	2.28E+03	-2.28E+03	2.28E+03	-75.8	75.9
45.	0.162	-3.41E+03	3.42E+03	-3.41E+03	3.41E+03	-75.8	75.9
65.	0.167	-4.93E+03	4.93E+03	-4.93E+03	4.93E+03	-75.8	75.9

Table N-797. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.142	-379.	380.	-379.	379.	-75.9	75.9
15.	0.138	-1.14E+03	1.14E+03	-1.14E+03	1.14E+03	-75.9	75.9
30.	0.139	-2.28E+03	2.28E+03	-2.28E+03	2.28E+03	-75.9	75.9
45.	0.135	-3.41E+03	3.41E+03	-3.41E+03	3.41E+03	-75.9	75.9
65.	0.139	-4.93E+03	4.93E+03	-4.93E+03	4.93E+03	-75.9	75.9

Table N-798. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	10.5	-1.85E+03	1.87E+03	-1.83E+03	1.85E+03	-368.	368.
15.	22.8	-5.01E+03	4.97E+03	-4.88E+03	4.87E+03	-327.	323.
30.	105.	-1.46E+04	1.46E+04	-1.45E+04	1.45E+04	-486.	478.
45.	573.	-2.12E+04	2.12E+04	-2.00E+04	1.99E+04	-457.	430.
65.	935.	-2.76E+04	2.75E+04	-2.15E+04	2.23E+04	-345.	329.



TASK 1/ROLL MOTION/MODEL 5514

Table N-799. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-800. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.38E-03	-352.	352.	-348.	348.	-69.7	69.6
15.	-0.261	-1.15E+03	1.15E+03	-1.13E+03	1.13E+03	-75.1	75.0
30.	-3.10	-5.16E+03	5.13E+03	-5.05E+03	5.03E+03	-168.	168.
45.	-11.1	-1.18E+04	1.17E+04	-1.16E+04	1.15E+04	-258.	257.
65.	-11.4	-2.50E+04	2.53E+04	-2.07E+04	2.07E+04	-319.	318.

# TASK 1/ROLL MOTION/MODEL 5514

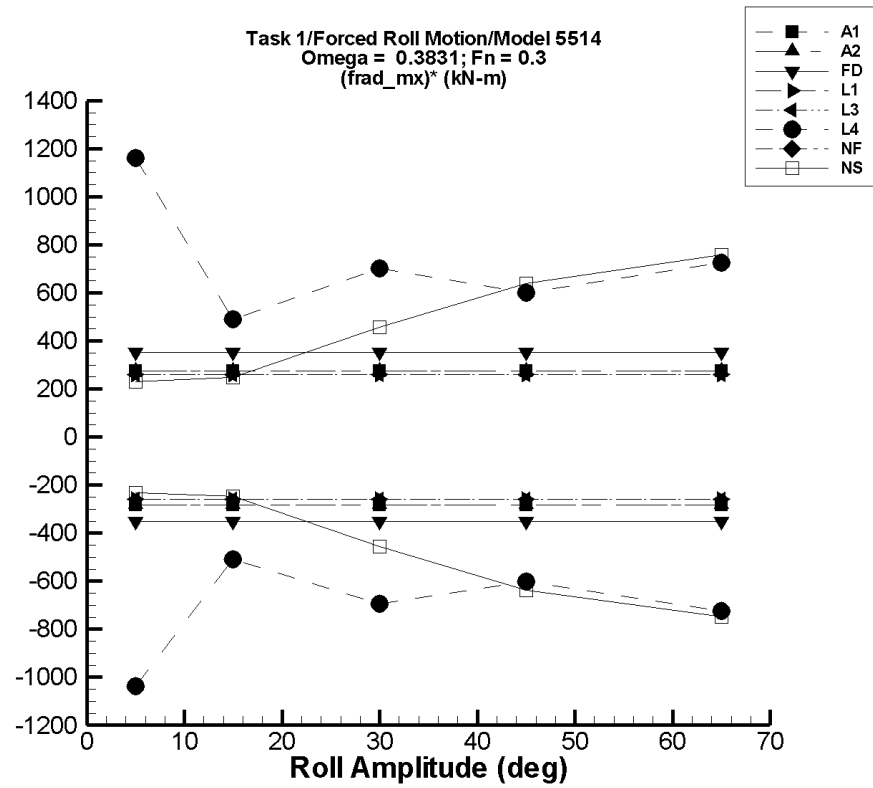


Figure N-101. Minimum and Maximum of  $(M_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-801. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-1.12	-1.42E+03	1.39E+03	-1.42E+03	1.37E+03	-283.	274.
15.	-3.37	-4.27E+03	4.18E+03	-4.25E+03	4.10E+03	-283.	274.
30.	-6.73	-8.54E+03	8.36E+03	-8.49E+03	8.21E+03	-283.	274.
45.	-10.1	-1.28E+04	1.25E+04	-1.27E+04	1.23E+04	-283.	274.
65.	-14.6	-1.85E+04	1.81E+04	-1.84E+04	1.78E+04	-283.	274.

Table N-802. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_x^{\text{rad}})^*$ Max. (kN-m/°)
5.	-1.12	-1.42E+03	1.39E+03	-1.42E+03	1.37E+03	-283.	274.
15.	-3.37	-4.27E+03	4.18E+03	-4.25E+03	4.10E+03	-283.	274.
30.	-6.73	-8.54E+03	8.36E+03	-8.49E+03	8.21E+03	-283.	274.
45.	-10.1	-1.28E+04	1.25E+04	-1.27E+04	1.23E+04	-283.	274.
65.	-14.6	-1.85E+04	1.81E+04	-1.84E+04	1.78E+04	-283.	274.

Table N-803. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	4.31E-04	-1.77E+03	1.77E+03	-1.76E+03	1.76E+03	-353.	353.
15.	1.24E-03	-5.31E+03	5.31E+03	-5.29E+03	5.29E+03	-353.	353.
30.	2.22E-03	-1.06E+04	1.06E+04	-1.06E+04	1.06E+04	-353.	353.
45.	3.12E-03	-1.59E+04	1.59E+04	-1.59E+04	1.59E+04	-353.	353.
65.	3.75E-03	-2.30E+04	2.30E+04	-2.29E+04	2.29E+04	-353.	353.

Table N-804. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.175	-1.30E+03	1.30E+03	-1.29E+03	1.29E+03	-259.	259.
15.	0.177	-3.89E+03	3.89E+03	-3.88E+03	3.88E+03	-259.	259.
30.	0.185	-7.77E+03	7.77E+03	-7.76E+03	7.76E+03	-259.	259.
45.	0.188	-1.17E+04	1.17E+04	-1.16E+04	1.16E+04	-259.	259.
65.	0.193	-1.68E+04	1.68E+04	-1.68E+04	1.68E+04	-259.	259.

Table N-805. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.139	-1.30E+03	1.30E+03	-1.29E+03	1.29E+03	-259.	259.
15.	0.140	-3.89E+03	3.89E+03	-3.88E+03	3.88E+03	-259.	259.
30.	0.147	-7.77E+03	7.77E+03	-7.76E+03	7.76E+03	-259.	259.
45.	0.147	-1.17E+04	1.17E+04	-1.16E+04	1.16E+04	-259.	259.
65.	0.155	-1.68E+04	1.68E+04	-1.68E+04	1.68E+04	-259.	259.

Table N-806. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-12.7	-5.52E+03	5.98E+03	-5.20E+03	5.78E+03	-1.04E+03	1.16E+03
15.	121.	-7.84E+03	7.70E+03	-7.51E+03	7.47E+03	-509.	490.
30.	229.	-2.16E+04	2.18E+04	-2.06E+04	2.12E+04	-695.	700.
45.	210.	-3.20E+04	3.26E+04	-2.69E+04	2.73E+04	-601.	601.
65.	0.246	-4.96E+04	4.83E+04	-4.72E+04	4.71E+04	-726.	725.

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Table N-807. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-808. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	9.90E-03	-1.17E+03	1.17E+03	-1.15E+03	1.16E+03	-231.	231.
15.	0.440	-3.76E+03	3.77E+03	-3.70E+03	3.71E+03	-247.	247.
30.	4.79	-1.39E+04	1.40E+04	-1.37E+04	1.37E+04	-457.	458.
45.	20.7	-2.92E+04	2.93E+04	-2.87E+04	2.88E+04	-639.	640.
65.	95.7	-5.84E+04	5.91E+04	-4.84E+04	4.93E+04	-747.	757.

# TASK 1/ROLL MOTION/MODEL 5514

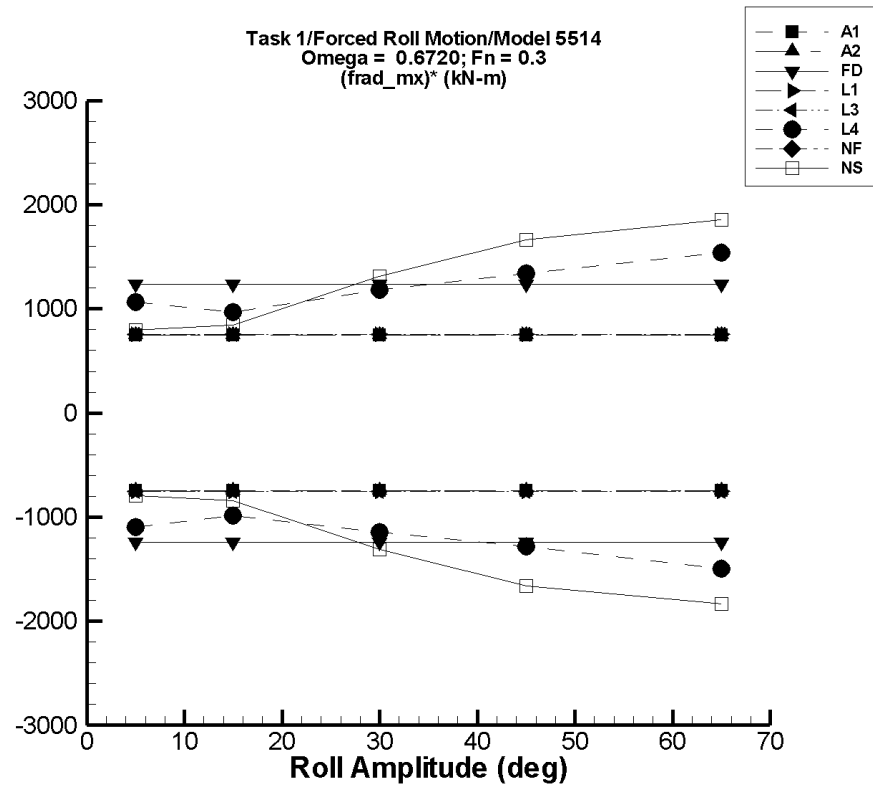


Figure N-102. Minimum and Maximum of  $(M_x^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-809. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.06	-3.77E+03	3.78E+03	-3.72E+03	3.73E+03	-743.	747.
15.	-9.18	-1.13E+04	1.13E+04	-1.12E+04	1.12E+04	-743.	747.
30.	-18.4	-2.26E+04	2.27E+04	-2.23E+04	2.24E+04	-743.	747.
45.	-27.5	-3.39E+04	3.40E+04	-3.35E+04	3.36E+04	-743.	747.
65.	-39.8	-4.90E+04	4.91E+04	-4.83E+04	4.85E+04	-743.	747.

Table N-810. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-3.06	-3.77E+03	3.78E+03	-3.72E+03	3.73E+03	-743.	747.
15.	-9.18	-1.13E+04	1.13E+04	-1.12E+04	1.12E+04	-743.	747.
30.	-18.4	-2.26E+04	2.27E+04	-2.23E+04	2.24E+04	-743.	747.
45.	-27.5	-3.39E+04	3.40E+04	-3.35E+04	3.36E+04	-743.	747.
65.	-39.8	-4.90E+04	4.91E+04	-4.83E+04	4.85E+04	-743.	747.



Table N-811. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.14E-02	-6.27E+03	6.27E+03	-6.19E+03	6.20E+03	-1.24E+03	1.24E+03
15.	-3.53E-02	-1.88E+04	1.88E+04	-1.86E+04	1.86E+04	-1.24E+03	1.24E+03
30.	-6.82E-02	-3.76E+04	3.76E+04	-3.72E+04	3.72E+04	-1.24E+03	1.24E+03
45.	-0.104	-5.64E+04	5.64E+04	-5.57E+04	5.58E+04	-1.24E+03	1.24E+03
65.	-0.148	-8.15E+04	8.15E+04	-8.05E+04	8.05E+04	-1.24E+03	1.24E+03

Table N-812. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.176	-3.79E+03	3.79E+03	-3.78E+03	3.78E+03	-755.	755.
15.	0.180	-1.14E+04	1.14E+04	-1.13E+04	1.13E+04	-755.	755.
30.	0.197	-2.28E+04	2.28E+04	-2.27E+04	2.27E+04	-755.	755.
45.	0.217	-3.41E+04	3.41E+04	-3.40E+04	3.40E+04	-755.	755.
65.	0.253	-4.93E+04	4.93E+04	-4.91E+04	4.91E+04	-755.	755.

Table N-813. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.140	-3.79E+03	3.79E+03	-3.78E+03	3.78E+03	-755.	755.
15.	0.149	-1.14E+04	1.14E+04	-1.13E+04	1.13E+04	-755.	755.
30.	0.169	-2.28E+04	2.28E+04	-2.27E+04	2.27E+04	-755.	755.
45.	0.186	-3.41E+04	3.41E+04	-3.40E+04	3.40E+04	-755.	755.
65.	0.211	-4.93E+04	4.93E+04	-4.91E+04	4.91E+04	-755.	755.

Table N-814. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_x^{\text{rad}}$ Max. (kN-m)	Filtered $(M_x^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	34.7	-5.66E+03	5.66E+03	-5.45E+03	5.37E+03	-1.10E+03	1.07E+03
15.	92.9	-1.51E+04	1.56E+04	-1.47E+04	1.46E+04	-984.	965.
30.	-91.2	-3.63E+04	3.62E+04	-3.45E+04	3.54E+04	-1.15E+03	1.18E+03
45.	-1.36E+03	-6.09E+04	6.06E+04	-5.91E+04	5.90E+04	-1.28E+03	1.34E+03
65.	-2.92E+03	-1.06E+05	1.04E+05	-1.00E+05	9.72E+04	-1.50E+03	1.54E+03

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Table N-815. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-816. Minimum and Maximum of  $M_x^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_x^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_x^{\text{rad}}$		Filtered $M_x^{\text{rad}}$		Filtered $(M_x^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.871	-4.02E+03	4.02E+03	-3.98E+03	3.98E+03	-796.	797.
15.	-1.35	-1.28E+04	1.28E+04	-1.26E+04	1.26E+04	-842.	842.
30.	9.36	-4.00E+04	4.01E+04	-3.94E+04	3.95E+04	-1.31E+03	1.32E+03
45.	41.6	-7.59E+04	7.62E+04	-7.47E+04	7.50E+04	-1.66E+03	1.67E+03
65.	363.	-1.25E+05	1.36E+05	-1.19E+05	1.21E+05	-1.83E+03	1.86E+03

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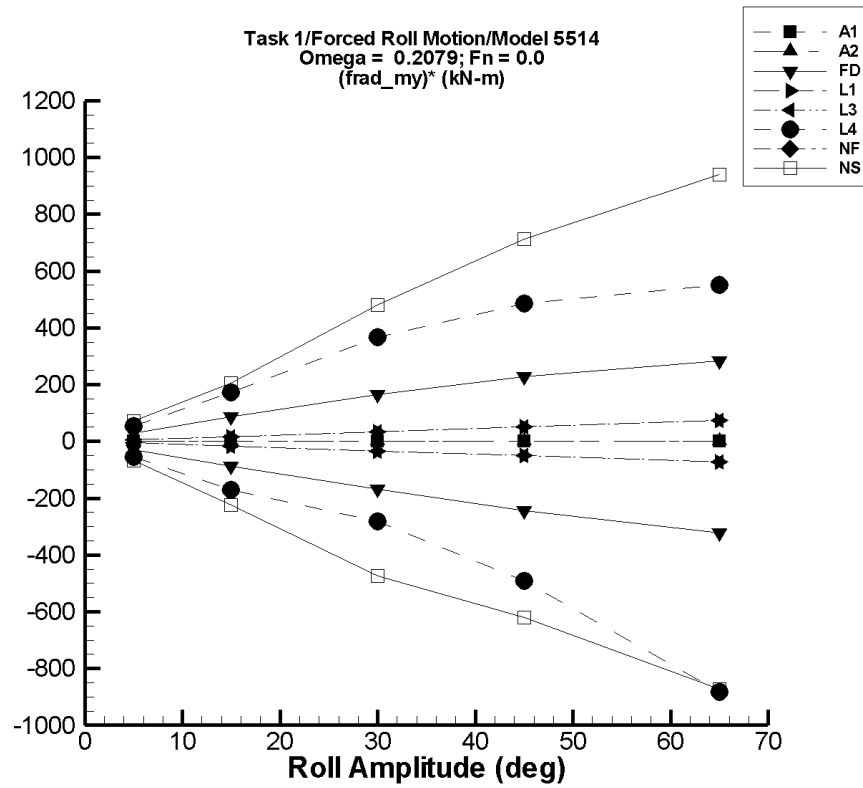


Figure N-103. Minimum and Maximum of  $(M_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-817. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.33E-04	-0.244	0.244	-6.74E-02	6.82E-02	-1.36E-02	1.36E-02
15.	1.00E-03	-0.733	0.733	-0.202	0.205	-1.35E-02	1.36E-02
30.	2.00E-03	-1.47	1.47	-0.404	0.409	-1.35E-02	1.36E-02
45.	3.00E-03	-2.20	2.20	-0.607	0.614	-1.35E-02	1.36E-02
65.	4.33E-03	-3.17	3.18	-0.876	0.887	-1.35E-02	1.36E-02

Table N-818. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.33E-04	-0.244	0.244	-6.74E-02	6.82E-02	-1.36E-02	1.36E-02
15.	1.00E-03	-0.733	0.733	-0.202	0.205	-1.35E-02	1.36E-02
30.	2.00E-03	-1.47	1.47	-0.404	0.409	-1.35E-02	1.36E-02
45.	3.00E-03	-2.20	2.20	-0.607	0.614	-1.35E-02	1.36E-02
65.	4.33E-03	-3.17	3.18	-0.876	0.887	-1.35E-02	1.36E-02

Table N-819. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	145.	-0.279	290.	-0.855	290.	-29.2	28.9
15.	1.30E+03	-2.51	2.59E+03	-7.63	2.58E+03	-86.9	85.7
30.	5.05E+03	-10.0	9.99E+03	-29.6	9.97E+03	-169.	164.
45.	1.09E+04	-22.6	2.12E+04	-63.2	2.12E+04	-243.	228.
65.	2.08E+04	-47.1	3.92E+04	-119.	3.92E+04	-322.	283.

Table N-820. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	27.9	-1.10E-02	55.9	3.38E-02	55.9	-5.58	5.59
15.	251.	-2.16E-02	503.	0.377	503.	-16.7	16.8
30.	1.00E+03	-2.03E-02	2.01E+03	1.55	2.01E+03	-33.4	33.5
45.	2.26E+03	-2.14E-02	4.53E+03	3.51	4.52E+03	-50.2	50.3
65.	4.72E+03	-2.58E-02	9.44E+03	7.37	9.44E+03	-72.5	72.7

Table N-821. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	27.9	-1.12E-02	55.9	3.36E-02	55.9	-5.58	5.59
15.	251.	-2.15E-02	503.	0.377	503.	-16.7	16.8
30.	1.00E+03	-2.31E-02	2.01E+03	1.55	2.01E+03	-33.4	33.5
45.	2.26E+03	-2.52E-02	4.53E+03	3.51	4.52E+03	-50.2	50.3
65.	4.72E+03	-2.31E-02	9.44E+03	7.37	9.44E+03	-72.5	72.7

Table N-822. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	39.3	-255.	343.	-229.	309.	-53.7	54.0
15.	260.	-2.45E+03	2.96E+03	-2.31E+03	2.84E+03	-172.	172.
30.	793.	-8.24E+03	1.24E+04	-7.64E+03	1.18E+04	-281.	366.
45.	1.93E+03	-3.10E+04	2.55E+04	-2.02E+04	2.38E+04	-492.	486.
65.	9.36E+03	-7.11E+04	7.95E+04	-4.80E+04	4.51E+04	-882.	551.

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Table N-823. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-824. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.04	-352.	377.	-342.	352.	-66.6	72.2
15.	-80.1	-3.66E+03	3.49E+03	-3.46E+03	3.02E+03	-225.	206.
30.	-254.	-1.50E+04	1.61E+04	-1.45E+04	1.42E+04	-473.	480.
45.	1.27E+03	-3.23E+04	3.75E+04	-2.66E+04	3.33E+04	-619.	712.
65.	6.07E+03	-6.34E+04	7.91E+04	-5.06E+04	6.72E+04	-872.	941.



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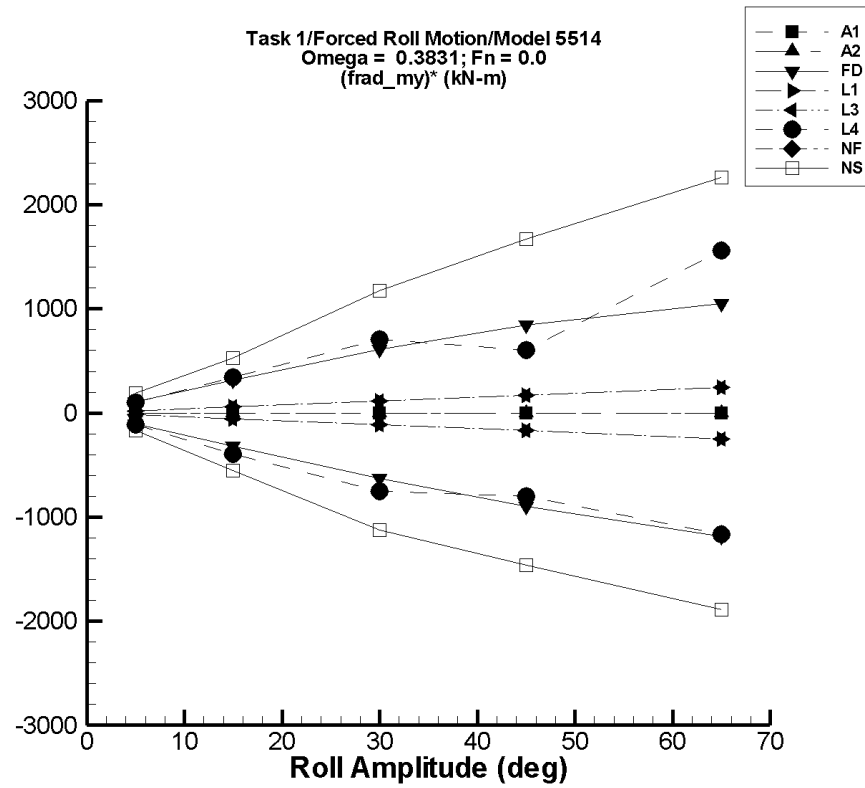


Figure N-104. Minimum and Maximum of  $(M_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-825. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	5.34E-04	-0.682	0.539	-0.432	0.465	-8.64E-02	9.28E-02
15.	1.60E-03	-2.05	1.62	-1.29	1.39	-8.64E-02	9.28E-02
30.	3.20E-03	-4.09	3.23	-2.59	2.79	-8.64E-02	9.28E-02
45.	4.81E-03	-6.14	4.85	-3.88	4.18	-8.64E-02	9.28E-02
65.	6.94E-03	-8.87	7.00	-5.61	6.04	-8.64E-02	9.28E-02

Table N-826. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	5.34E-04	-0.682	0.539	-0.432	0.465	-8.64E-02	9.28E-02
15.	1.60E-03	-2.05	1.62	-1.29	1.39	-8.64E-02	9.28E-02
30.	3.20E-03	-4.09	3.23	-2.59	2.79	-8.64E-02	9.28E-02
45.	4.81E-03	-6.14	4.85	-3.88	4.18	-8.64E-02	9.28E-02
65.	6.94E-03	-8.87	7.00	-5.61	6.04	-8.64E-02	9.28E-02

Table N-827. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	544.	0.204	1.09E+03	3.85	1.08E+03	-108.	107.
15.	4.86E+03	1.84	9.68E+03	34.8	9.61E+03	-321.	317.
30.	1.89E+04	7.34	3.74E+04	140.	3.71E+04	-626.	607.
45.	4.08E+04	16.5	7.94E+04	318.	7.88E+04	-899.	846.
65.	7.80E+04	34.5	1.47E+05	676.	1.46E+05	-1.19E+03	1.05E+03

Table N-828. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	95.5	5.74E-03	191.	0.517	191.	-19.0	19.1
15.	859.	0.234	1.72E+03	4.83	1.72E+03	-57.0	57.3
30.	3.44E+03	0.779	6.88E+03	19.2	6.87E+03	-114.	115.
45.	7.73E+03	1.60	1.55E+04	43.0	1.55E+04	-171.	172.
65.	1.61E+04	3.18	3.23E+04	89.5	3.23E+04	-247.	248.

Table N-829. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	95.5	6.55E-03	191.	0.518	191.	-19.0	19.1
15.	859.	0.233	1.72E+03	4.83	1.72E+03	-57.0	57.3
30.	3.44E+03	0.776	6.88E+03	19.1	6.87E+03	-114.	115.
45.	7.73E+03	1.61	1.55E+04	43.0	1.55E+04	-171.	172.
65.	1.61E+04	3.17	3.23E+04	89.5	3.23E+04	-247.	248.

Table N-830. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ <b>Mean</b> (kN-m)	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
		<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m)	<b>Max.</b> (kN-m)	<b>Min.</b> (kN-m/°)	<b>Max.</b> (kN-m/°)
5.	125.	-587.	683.	-439.	622.	-113.	99.3
15.	914.	-5.66E+03	6.74E+03	-4.98E+03	6.03E+03	-393.	341.
30.	3.92E+03	-2.00E+04	2.74E+04	-1.86E+04	2.50E+04	-751.	704.
45.	1.04E+04	-2.81E+04	4.39E+04	-2.56E+04	3.74E+04	-799.	602.
65.	3.01E+04	-6.36E+04	1.44E+05	-4.56E+04	1.32E+05	-1.16E+03	1.56E+03

Table N-831. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-832. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-32.0	-910.	973.	-884.	907.	-170.	188.
15.	-338.	-9.13E+03	8.82E+03	-8.65E+03	7.59E+03	-554.	528.
30.	-1.26E+03	-3.63E+04	3.81E+04	-3.50E+04	3.39E+04	-1.12E+03	1.17E+03
45.	1.41E+03	-7.32E+04	8.62E+04	-6.43E+04	7.65E+04	-1.46E+03	1.67E+03
65.	9.86E+03	-1.48E+05	1.86E+05	-1.13E+05	1.57E+05	-1.89E+03	2.26E+03

# TASK 1/ROLL MOTION/MODEL 5514

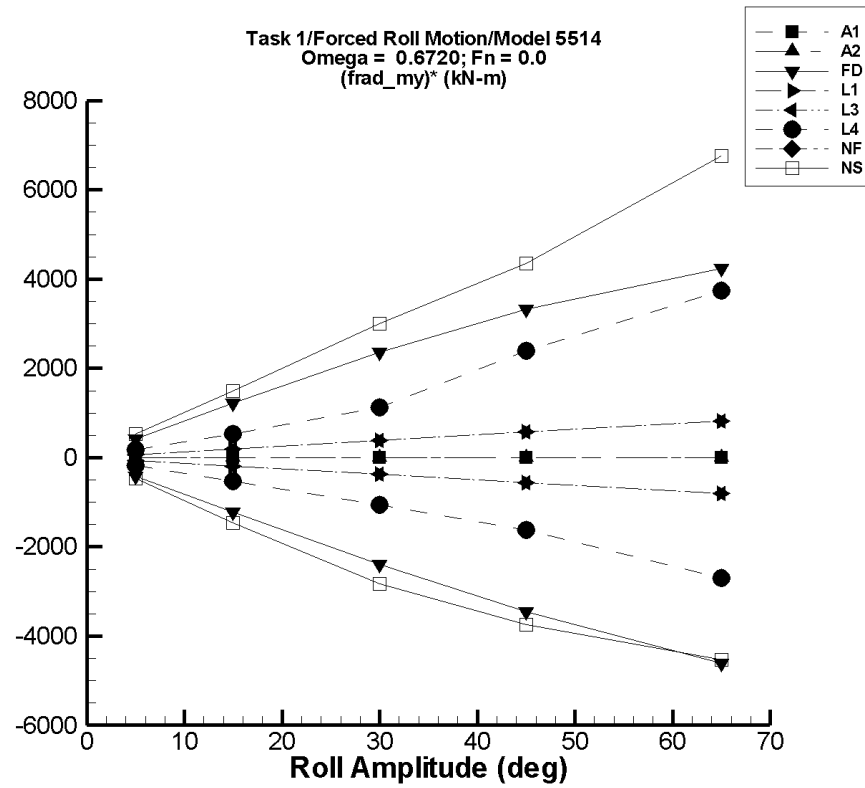


Figure N-105. Minimum and Maximum of  $(M_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-833. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	9.94E-03	-3.54	3.72	-2.96	2.85	-0.593	0.569
15.	2.98E-02	-10.6	11.2	-8.87	8.56	-0.593	0.569
30.	5.96E-02	-21.2	22.3	-17.7	17.1	-0.593	0.569
45.	8.94E-02	-31.9	33.5	-26.6	25.7	-0.593	0.569
65.	0.129	-46.0	48.4	-38.4	37.1	-0.593	0.569

Table N-834. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	9.94E-03	-3.54	3.72	-2.96	2.85	-0.593	0.569
15.	2.98E-02	-10.6	11.2	-8.87	8.56	-0.593	0.569
30.	5.96E-02	-21.2	22.3	-17.7	17.1	-0.593	0.569
45.	8.94E-02	-31.9	33.5	-26.6	25.7	-0.593	0.569
65.	0.129	-46.0	48.4	-38.4	37.1	-0.593	0.569

Table N-835. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.86E+03	-289.	4.02E+03	-198.	3.93E+03	-412.	414.
15.	1.67E+04	-2.60E+03	3.58E+04	-1.78E+03	3.51E+04	-1.23E+03	1.23E+03
30.	6.49E+04	-1.04E+04	1.39E+05	-7.08E+03	1.36E+05	-2.40E+03	2.36E+03
45.	1.40E+05	-2.32E+04	2.96E+05	-1.58E+04	2.89E+05	-3.46E+03	3.32E+03
65.	2.67E+05	-4.81E+04	5.54E+05	-3.27E+04	5.42E+05	-4.61E+03	4.24E+03

Table N-836. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	306.	-10.1	622.	-4.95	623.	-62.2	63.4
15.	2.75E+03	-90.8	5.60E+03	-43.7	5.61E+03	-187.	190.
30.	1.10E+04	-362.	2.24E+04	-174.	2.24E+04	-373.	380.
45.	2.48E+04	-814.	5.04E+04	-391.	5.04E+04	-560.	570.
65.	5.17E+04	-1.70E+03	1.05E+05	-816.	1.05E+05	-808.	824.



Table N-837. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
	<b>Mean (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m/°)</b>	<b>Max. (kN-m/°)</b>
5.	306.	-10.1	622.	-4.95	623.	-62.2	63.4
15.	2.75E+03	-90.7	5.60E+03	-43.7	5.61E+03	-187.	190.
30.	1.10E+04	-362.	2.24E+04	-174.	2.24E+04	-373.	380.
45.	2.48E+04	-814.	5.04E+04	-391.	5.04E+04	-560.	570.
65.	5.17E+04	-1.70E+03	1.05E+05	-816.	1.05E+05	-808.	824.

Table N-838. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
	<b>Mean (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m)</b>	<b>Max. (kN-m)</b>	<b>Min. (kN-m/°)</b>	<b>Max. (kN-m/°)</b>
5.	356.	-948.	1.37E+03	-530.	1.20E+03	-177.	169.
15.	1.98E+03	-7.57E+03	1.16E+04	-6.09E+03	9.94E+03	-538.	531.
30.	5.85E+03	-3.56E+04	4.79E+04	-2.61E+04	3.94E+04	-1.06E+03	1.12E+03
45.	1.69E+04	-6.35E+04	1.50E+05	-5.62E+04	1.25E+05	-1.63E+03	2.40E+03
65.	3.94E+04	-1.86E+05	3.35E+05	-1.36E+05	2.83E+05	-2.70E+03	3.74E+03

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Table N-839. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-840. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-144.	-2.56E+03	2.65E+03	-2.47E+03	2.49E+03	-466.	527.
15.	-1.60E+03	-2.45E+04	2.24E+04	-2.37E+04	2.08E+04	-1.47E+03	1.49E+03
30.	-6.69E+03	-9.32E+04	9.08E+04	-9.15E+04	8.33E+04	-2.83E+03	3.00E+03
45.	-6.13E+03	-1.87E+05	2.09E+05	-1.75E+05	1.90E+05	-3.75E+03	4.36E+03
65.	-2.18E+03	-4.61E+05	5.15E+05	-2.97E+05	4.38E+05	-4.54E+03	6.77E+03

# TASK 1/ROLL MOTION/MODEL 5514

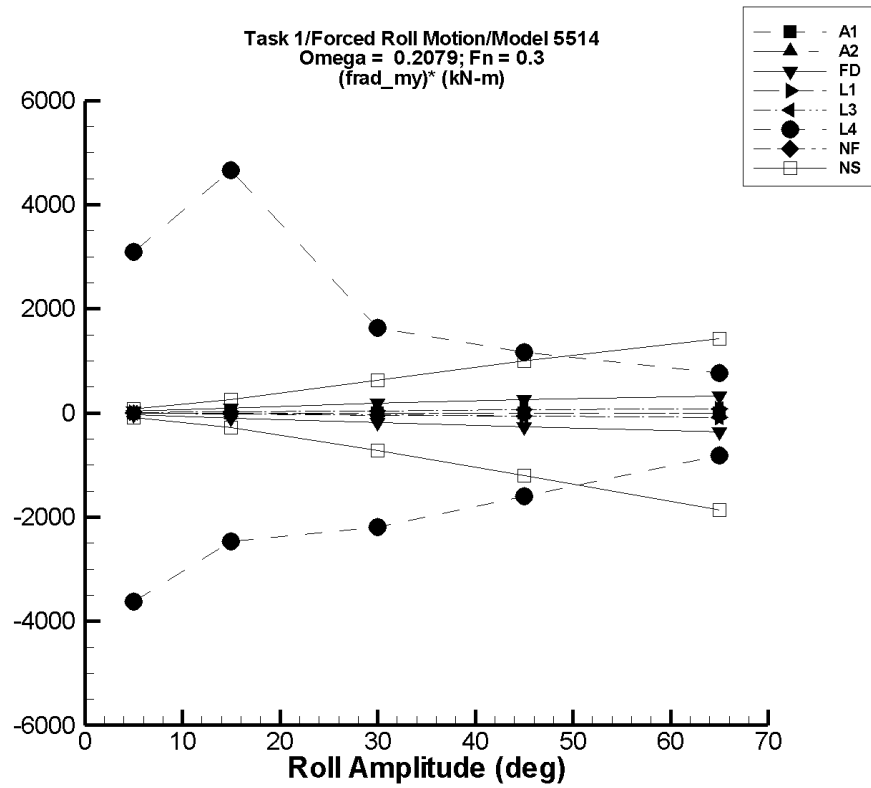


Figure N-106. Minimum and Maximum of  $(M_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

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Table N-841. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.91E-03	-4.14	4.08	-3.10	3.06	-0.619	0.614
15.	-2.97E-02	-12.4	12.2	-9.31	9.17	-0.619	0.614
30.	-5.95E-02	-24.8	24.5	-18.6	18.3	-0.619	0.614
45.	-8.92E-02	-37.2	36.7	-27.9	27.5	-0.619	0.614
65.	-0.129	-53.8	53.0	-40.3	39.8	-0.619	0.614

Table N-842. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.91E-03	-4.14	4.08	-3.10	3.06	-0.619	0.614
15.	-2.97E-02	-12.4	12.2	-9.31	9.17	-0.619	0.614
30.	-5.95E-02	-24.8	24.5	-18.6	18.3	-0.619	0.614
45.	-8.92E-02	-37.2	36.7	-27.9	27.5	-0.619	0.614
65.	-0.129	-53.8	53.0	-40.3	39.8	-0.619	0.614

Table N-843. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	145.	-15.0	304.	-14.3	304.	-31.8	31.8
15.	1.29E+03	-135.	2.71E+03	-129.	2.71E+03	-94.8	94.3
30.	5.04E+03	-539.	1.05E+04	-514.	1.05E+04	-185.	181.
45.	1.09E+04	-1.21E+03	2.24E+04	-1.15E+03	2.23E+04	-267.	254.
65.	2.08E+04	-2.51E+03	4.17E+04	-2.39E+03	4.17E+04	-356.	322.

Table N-844. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
(°)	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.36E+04	4.36E+04	4.37E+04	4.36E+04	4.37E+04	-8.14	6.61
15.	4.39E+04	4.36E+04	4.42E+04	4.36E+04	4.42E+04	-20.0	19.4
30.	4.48E+04	4.36E+04	4.60E+04	4.36E+04	4.59E+04	-39.2	38.8
45.	4.63E+04	4.36E+04	4.89E+04	4.36E+04	4.89E+04	-58.5	58.4
65.	4.91E+04	4.36E+04	5.46E+04	4.36E+04	5.46E+04	-84.4	84.4

Table N-845. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	4.36E+04	4.36E+04	4.37E+04	4.36E+04	4.37E+04	-7.16	6.89
15.	4.39E+04	4.36E+04	4.42E+04	4.36E+04	4.42E+04	-19.6	19.4
30.	4.48E+04	4.36E+04	4.60E+04	4.36E+04	4.59E+04	-39.0	38.9
45.	4.63E+04	4.36E+04	4.89E+04	4.36E+04	4.89E+04	-58.4	58.3
65.	4.91E+04	4.36E+04	5.46E+04	4.36E+04	5.46E+04	-84.3	84.3

Table N-846. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	4.12E+04	1.27E+04	5.75E+04	2.31E+04	5.67E+04	-3.62E+03	3.09E+03
15.	3.54E+04	-9.34E+03	1.11E+05	-1.74E+03	1.05E+05	-2.47E+03	4.66E+03
30.	2.38E+04	-5.30E+04	7.86E+04	-4.21E+04	7.26E+04	-2.19E+03	1.63E+03
45.	1.78E+04	-6.82E+04	7.71E+04	-5.43E+04	7.05E+04	-1.60E+03	1.17E+03
65.	2.03E+04	-4.64E+04	8.08E+04	-3.31E+04	7.00E+04	-823.	764.

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Table N-847. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-848. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-22.0	-443.	449.	-429.	397.	-81.5	83.9
15.	-267.	-4.71E+03	3.98E+03	-4.44E+03	3.55E+03	-278.	255.
30.	-1.42E+03	-2.39E+04	1.93E+04	-2.31E+04	1.73E+04	-724.	625.
45.	-3.32E+03	-5.96E+04	4.55E+04	-5.75E+04	4.15E+04	-1.20E+03	996.
65.	-3.50E+03	-1.47E+05	1.02E+05	-1.24E+05	8.92E+04	-1.86E+03	1.43E+03

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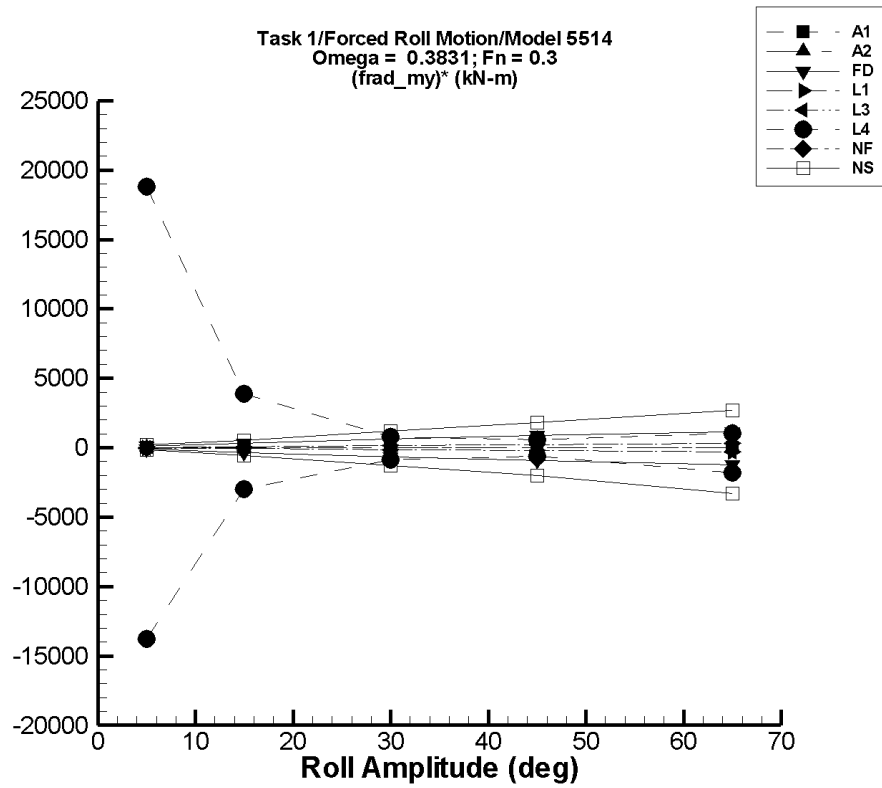


Figure N-107. Minimum and Maximum of  $(M_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.



Table N-849. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.21E-02	-3.00	1.98	-1.91	1.88	-0.388	0.369
15.	9.62E-02	-8.99	5.93	-5.73	5.63	-0.388	0.369
30.	0.192	-18.0	11.9	-11.5	11.3	-0.388	0.369
45.	0.289	-27.0	17.8	-17.2	16.9	-0.388	0.369
65.	0.417	-39.0	25.7	-24.8	24.4	-0.388	0.369

Table N-850. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.21E-02	-3.00	1.98	-1.91	1.88	-0.388	0.369
15.	9.62E-02	-8.99	5.93	-5.73	5.63	-0.388	0.369
30.	0.192	-18.0	11.9	-11.5	11.3	-0.388	0.369
45.	0.289	-27.0	17.8	-17.2	16.9	-0.388	0.369
65.	0.417	-39.0	25.7	-24.8	24.4	-0.388	0.369

Table N-851. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	557.	-16.9	1.13E+03	-8.32	1.12E+03	-113.	113.
15.	4.98E+03	-152.	1.01E+04	-74.9	1.00E+04	-337.	335.
30.	1.94E+04	-607.	3.90E+04	-299.	3.87E+04	-657.	642.
45.	4.18E+04	-1.36E+03	8.27E+04	-672.	8.22E+04	-944.	896.
65.	8.00E+04	-2.84E+03	1.54E+05	-1.40E+03	1.53E+05	-1.25E+03	1.12E+03

Table N-852. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.37E+04	4.36E+04	4.38E+04	4.36E+04	4.38E+04	-22.4	24.2
15.	4.46E+04	4.36E+04	4.56E+04	4.36E+04	4.56E+04	-67.2	68.0
30.	4.77E+04	4.36E+04	5.17E+04	4.37E+04	5.17E+04	-134.	135.
45.	5.28E+04	4.37E+04	6.19E+04	4.37E+04	6.19E+04	-201.	203.
65.	6.28E+04	4.37E+04	8.18E+04	4.39E+04	8.18E+04	-291.	293.

Table N-853. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	4.37E+04	4.36E+04	4.38E+04	4.36E+04	4.38E+04	-22.6	23.0
15.	4.46E+04	4.36E+04	4.56E+04	4.36E+04	4.56E+04	-67.3	67.6
30.	4.77E+04	4.36E+04	5.17E+04	4.37E+04	5.17E+04	-134.	135.
45.	5.28E+04	4.37E+04	6.19E+04	4.37E+04	6.19E+04	-202.	203.
65.	6.28E+04	4.37E+04	8.18E+04	4.39E+04	8.18E+04	-291.	293.

Table N-854. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$	$\langle M_y^{\text{rad}} \rangle$	<b>Unfiltered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>M_y^{\text{rad}}</math></b>		<b>Filtered <math>(M_y^{\text{rad}})^*</math></b>	
(°)	<b>Mean</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>	<b>Min.</b>	<b>Max.</b>
	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m)</b>	<b>(kN-m/°)</b>	<b>(kN-m/°)</b>
5.	3.97E+04	-3.75E+04	1.45E+05	-2.91E+04	1.34E+05	-1.38E+04	1.88E+04
15.	3.11E+04	-2.57E+04	9.74E+04	-1.35E+04	8.91E+04	-2.97E+03	3.86E+03
30.	2.81E+04	-1.09E+04	5.96E+04	1.63E+03	5.22E+04	-884.	801.
45.	2.81E+04	-2.79E+04	8.46E+04	183.	5.46E+04	-620.	589.
65.	3.29E+04	-1.11E+05	1.29E+05	-8.57E+04	1.02E+05	-1.83E+03	1.05E+03

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Table N-855. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-856. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-58.9	-964.	982.	-930.	881.	-174.	188.
15.	-615.	-9.63E+03	8.33E+03	-9.25E+03	7.53E+03	-576.	543.
30.	-3.07E+03	-4.30E+04	3.61E+04	-4.18E+04	3.26E+04	-1.29E+03	1.19E+03
45.	-5.69E+03	-1.00E+05	8.53E+04	-9.54E+04	7.63E+04	-1.99E+03	1.82E+03
65.	-9.15E+03	-2.72E+05	1.94E+05	-2.25E+05	1.66E+05	-3.33E+03	2.69E+03

# TASK 1/ROLL MOTION/MODEL 5514

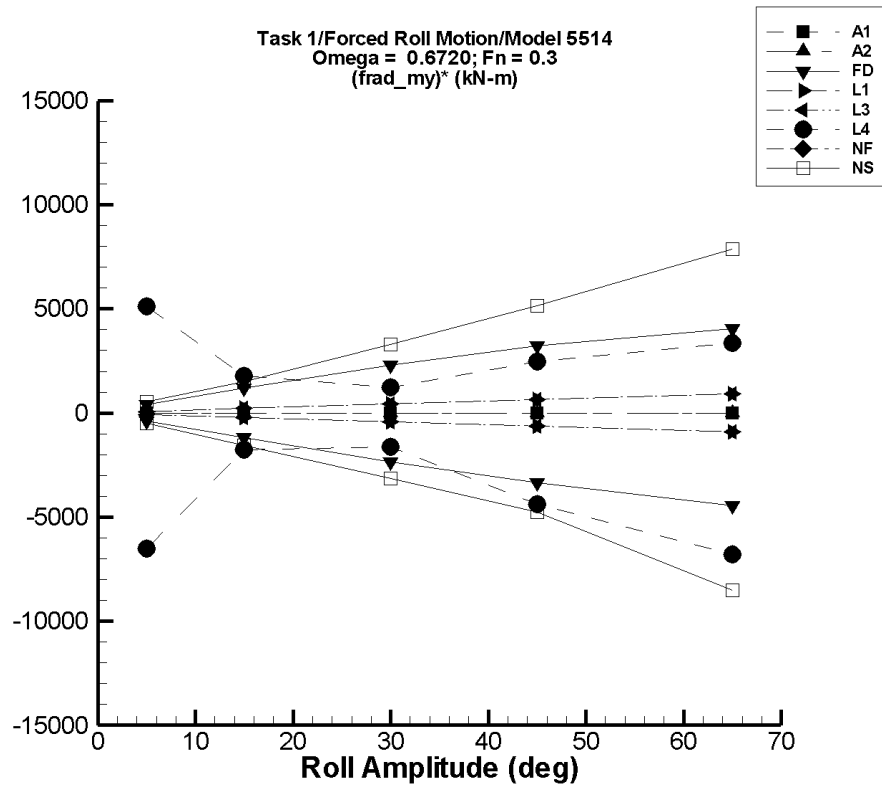


Figure N-108. Minimum and Maximum of  $(M_y^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

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Table N-857. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.01E-03	-3.37	3.33	-3.33	3.26	-0.665	0.655
15.	-2.70E-02	-10.1	9.98	-9.99	9.79	-0.664	0.654
30.	-5.40E-02	-20.2	20.0	-20.0	19.6	-0.664	0.654
45.	-8.10E-02	-30.3	29.9	-30.0	29.4	-0.664	0.654
65.	-0.117	-43.8	43.3	-43.3	42.4	-0.664	0.654

Table N-858. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-9.01E-03	-3.37	3.33	-3.33	3.26	-0.665	0.655
15.	-2.70E-02	-10.1	9.98	-9.99	9.79	-0.664	0.654
30.	-5.40E-02	-20.2	20.0	-20.0	19.6	-0.664	0.654
45.	-8.10E-02	-30.3	29.9	-30.0	29.4	-0.664	0.654
65.	-0.117	-43.8	43.3	-43.3	42.4	-0.664	0.654

Table N-859. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.89E+03	-176.	3.95E+03	-125.	3.91E+03	-402.	406.
15.	1.68E+04	-1.58E+03	3.52E+04	-1.13E+03	3.49E+04	-1.20E+03	1.20E+03
30.	6.56E+04	-6.32E+03	1.36E+05	-4.47E+03	1.35E+05	-2.34E+03	2.31E+03
45.	1.41E+05	-1.42E+04	2.90E+05	-9.95E+03	2.87E+05	-3.36E+03	3.23E+03
65.	2.70E+05	-2.94E+04	5.40E+05	-2.03E+04	5.32E+05	-4.46E+03	4.04E+03

Table N-860. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.39E+04	4.36E+04	4.43E+04	4.36E+04	4.43E+04	-71.3	70.5
15.	4.65E+04	4.33E+04	4.98E+04	4.34E+04	4.98E+04	-211.	215.
30.	5.53E+04	4.24E+04	6.82E+04	4.26E+04	6.82E+04	-422.	430.
45.	6.99E+04	4.10E+04	9.89E+04	4.14E+04	9.90E+04	-633.	645.
65.	9.86E+04	3.81E+04	1.59E+05	3.91E+04	1.59E+05	-915.	932.

Table N-861. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	4.39E+04	4.36E+04	4.43E+04	4.36E+04	4.43E+04	-70.6	71.3
15.	4.65E+04	4.33E+04	4.98E+04	4.34E+04	4.98E+04	-211.	215.
30.	5.53E+04	4.24E+04	6.82E+04	4.26E+04	6.82E+04	-422.	430.
45.	6.99E+04	4.10E+04	9.89E+04	4.14E+04	9.90E+04	-633.	645.
65.	9.86E+04	3.81E+04	1.59E+05	3.91E+04	1.59E+05	-915.	932.

Table N-862. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	3.93E+04	-4.14E+03	7.21E+04	6.73E+03	6.49E+04	-6.51E+03	5.13E+03
15.	3.12E+04	-5.18E+03	6.49E+04	4.94E+03	5.80E+04	-1.75E+03	1.78E+03
30.	2.42E+04	-2.78E+04	7.06E+04	-2.44E+04	6.09E+04	-1.62E+03	1.22E+03
45.	2.86E+04	-1.95E+05	1.63E+05	-1.68E+05	1.40E+05	-4.37E+03	2.47E+03
65.	6.24E+04	-4.20E+05	3.10E+05	-3.80E+05	2.82E+05	-6.81E+03	3.38E+03



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Table N-863. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-864. Minimum and Maximum of  $M_y^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_y^{\text{rad}} \rangle$	Unfiltered $M_y^{\text{rad}}$		Filtered $M_y^{\text{rad}}$		Filtered $(M_y^{\text{rad}})^*$	
	Mean (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-388.	-2.99E+03	2.49E+03	-2.90E+03	2.23E+03	-502.	523.
15.	-3.82E+03	-2.82E+04	2.20E+04	-2.71E+04	1.88E+04	-1.55E+03	1.51E+03
30.	-1.67E+04	-1.15E+05	9.14E+04	-1.11E+05	8.20E+04	-3.16E+03	3.29E+03
45.	-2.90E+04	-2.56E+05	2.22E+05	-2.43E+05	2.03E+05	-4.76E+03	5.16E+03
65.	-3.98E+04	-7.16E+05	5.43E+05	-5.93E+05	4.72E+05	-8.51E+03	7.88E+03

# TASK 1/ROLL MOTION/MODEL 5514

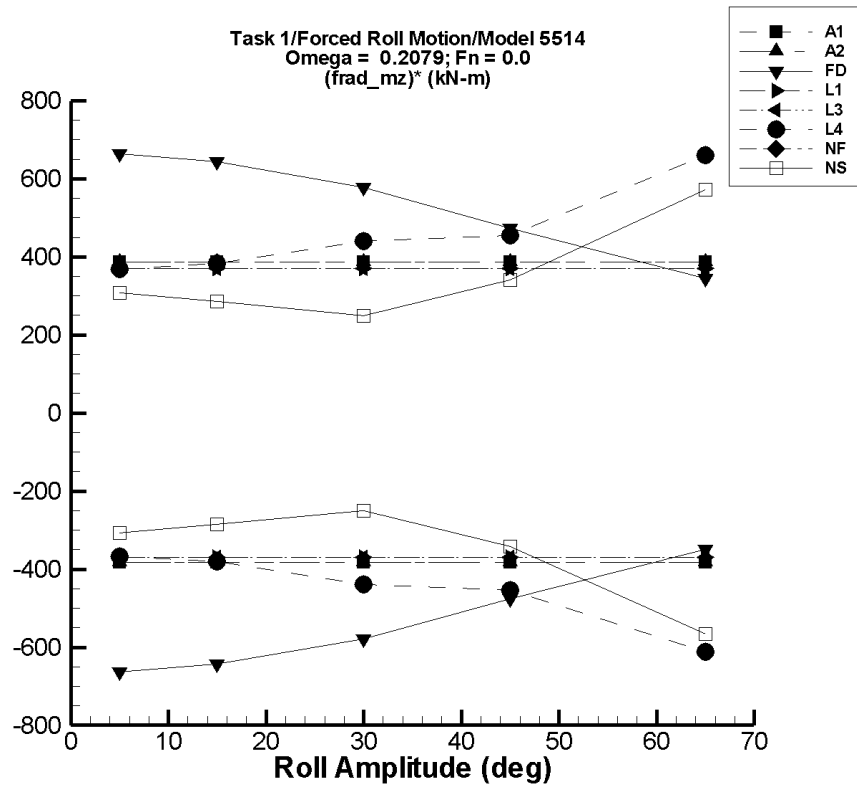


Figure N-109. Minimum and Maximum of  $(M_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.0.

Table N-865. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.97	-2.32E+03	2.34E+03	-1.92E+03	1.93E+03	-383.	387.
15.	-8.90	-6.95E+03	7.03E+03	-5.75E+03	5.79E+03	-383.	386.
30.	-17.8	-1.39E+04	1.41E+04	-1.15E+04	1.16E+04	-383.	386.
45.	-26.7	-2.08E+04	2.11E+04	-1.73E+04	1.74E+04	-383.	386.
65.	-38.5	-3.01E+04	3.05E+04	-2.49E+04	2.51E+04	-383.	386.

Table N-866. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-2.97	-2.32E+03	2.34E+03	-1.92E+03	1.93E+03	-383.	387.
15.	-8.90	-6.95E+03	7.03E+03	-5.75E+03	5.79E+03	-383.	386.
30.	-17.8	-1.39E+04	1.41E+04	-1.15E+04	1.16E+04	-383.	386.
45.	-26.7	-2.08E+04	2.11E+04	-1.73E+04	1.74E+04	-383.	386.
65.	-38.5	-3.01E+04	3.05E+04	-2.49E+04	2.51E+04	-383.	386.

Table N-867. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	9.84E-02	-3.32E+03	3.32E+03	-3.32E+03	3.32E+03	-663.	663.
15.	2.65	-9.66E+03	9.66E+03	-9.65E+03	9.65E+03	-644.	643.
30.	20.8	-1.73E+04	1.73E+04	-1.73E+04	1.73E+04	-578.	577.
45.	68.0	-2.13E+04	2.13E+04	-2.13E+04	2.13E+04	-476.	473.
65.	192.	-2.26E+04	2.26E+04	-2.25E+04	2.25E+04	-350.	344.

Table N-868. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	7.04E-02	-1.85E+03	1.85E+03	-1.85E+03	1.85E+03	-370.	370.
15.	0.212	-5.55E+03	5.56E+03	-5.55E+03	5.56E+03	-370.	370.
30.	0.423	-1.11E+04	1.11E+04	-1.11E+04	1.11E+04	-370.	370.
45.	0.640	-1.67E+04	1.67E+04	-1.66E+04	1.67E+04	-370.	370.
65.	0.924	-2.41E+04	2.41E+04	-2.40E+04	2.41E+04	-370.	370.

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Table N-869. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	7.04E-02	-1.85E+03	1.85E+03	-1.85E+03	1.85E+03	-370.	370.
15.	0.211	-5.55E+03	5.56E+03	-5.55E+03	5.56E+03	-370.	370.
30.	0.423	-1.11E+04	1.11E+04	-1.11E+04	1.11E+04	-370.	370.
45.	0.637	-1.67E+04	1.67E+04	-1.66E+04	1.67E+04	-370.	370.
65.	0.924	-2.41E+04	2.41E+04	-2.40E+04	2.41E+04	-370.	370.

Table N-870. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.410	-1.84E+03	1.84E+03	-1.84E+03	1.84E+03	-368.	369.
15.	-8.30	-5.74E+03	5.75E+03	-5.72E+03	5.73E+03	-381.	382.
30.	16.9	-1.34E+04	1.37E+04	-1.32E+04	1.32E+04	-439.	440.
45.	-137.	-2.57E+04	2.55E+04	-2.06E+04	2.03E+04	-454.	455.
65.	-1.52E+03	-5.31E+04	5.35E+04	-4.13E+04	4.14E+04	-612.	661.

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Table N-871. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-872. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-7.73E-03	-1.55E+03	1.55E+03	-1.54E+03	1.54E+03	-307.	307.
15.	-3.02E-03	-4.30E+03	4.30E+03	-4.28E+03	4.28E+03	-285.	285.
30.	0.204	-7.93E+03	7.93E+03	-7.49E+03	7.49E+03	-250.	250.
45.	4.87	-1.78E+04	1.78E+04	-1.54E+04	1.54E+04	-341.	341.
65.	44.8	-4.18E+04	4.28E+04	-3.67E+04	3.72E+04	-565.	572.

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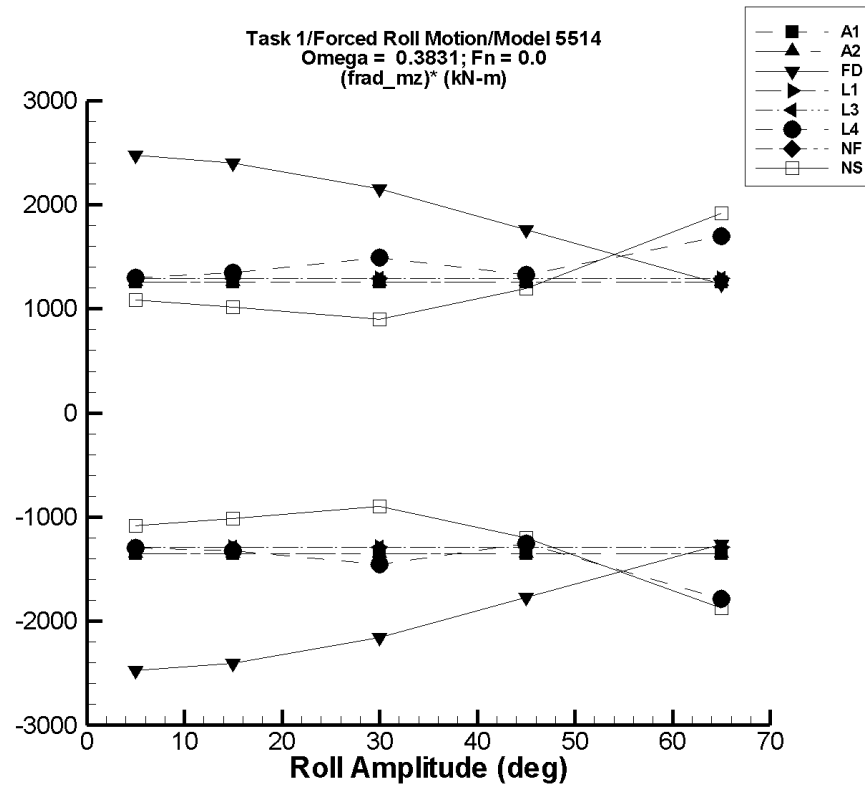


Figure N-110. Minimum and Maximum of  $(M_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.0.

Table N-873. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-14.8	-6.83E+03	6.97E+03	-6.78E+03	6.26E+03	-1.35E+03	1.25E+03
15.	-44.2	-2.05E+04	2.09E+04	-2.03E+04	1.88E+04	-1.35E+03	1.25E+03
30.	-88.5	-4.09E+04	4.18E+04	-4.06E+04	3.75E+04	-1.35E+03	1.25E+03
45.	-133.	-6.14E+04	6.27E+04	-6.10E+04	5.63E+04	-1.35E+03	1.25E+03
65.	-192.	-8.87E+04	9.06E+04	-8.80E+04	8.13E+04	-1.35E+03	1.25E+03

Table N-874. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-14.8	-6.83E+03	6.97E+03	-6.78E+03	6.26E+03	-1.35E+03	1.25E+03
15.	-44.2	-2.05E+04	2.09E+04	-2.03E+04	1.88E+04	-1.35E+03	1.25E+03
30.	-88.5	-4.09E+04	4.18E+04	-4.06E+04	3.75E+04	-1.35E+03	1.25E+03
45.	-133.	-6.14E+04	6.27E+04	-6.10E+04	5.63E+04	-1.35E+03	1.25E+03
65.	-192.	-8.87E+04	9.06E+04	-8.80E+04	8.13E+04	-1.35E+03	1.25E+03



Table N-875. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	0.345	-1.24E+04	1.24E+04	-1.24E+04	1.24E+04	-2.48E+03	2.48E+03
15.	9.21	-3.61E+04	3.61E+04	-3.60E+04	3.60E+04	-2.40E+03	2.40E+03
30.	72.1	-6.48E+04	6.48E+04	-6.47E+04	6.47E+04	-2.16E+03	2.15E+03
45.	234.	-7.95E+04	7.95E+04	-7.94E+04	7.94E+04	-1.77E+03	1.76E+03
65.	657.	-8.18E+04	8.18E+04	-8.12E+04	8.12E+04	-1.26E+03	1.24E+03

Table N-876. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	2.46E-02	-6.46E+03	6.46E+03	-6.45E+03	6.45E+03	-1.29E+03	1.29E+03
15.	6.89E-02	-1.94E+04	1.94E+04	-1.94E+04	1.94E+04	-1.29E+03	1.29E+03
30.	0.156	-3.88E+04	3.88E+04	-3.87E+04	3.87E+04	-1.29E+03	1.29E+03
45.	0.240	-5.82E+04	5.81E+04	-5.81E+04	5.81E+04	-1.29E+03	1.29E+03
65.	0.356	-8.40E+04	8.40E+04	-8.39E+04	8.39E+04	-1.29E+03	1.29E+03

Table N-877. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	2.42E-02	-6.46E+03	6.46E+03	-6.45E+03	6.45E+03	-1.29E+03	1.29E+03
15.	7.05E-02	-1.94E+04	1.94E+04	-1.94E+04	1.94E+04	-1.29E+03	1.29E+03
30.	0.156	-3.88E+04	3.88E+04	-3.87E+04	3.87E+04	-1.29E+03	1.29E+03
45.	0.238	-5.82E+04	5.81E+04	-5.81E+04	5.81E+04	-1.29E+03	1.29E+03
65.	0.348	-8.40E+04	8.40E+04	-8.39E+04	8.39E+04	-1.29E+03	1.29E+03

Table N-878. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	-5.81	-6.49E+03	6.48E+03	-6.48E+03	6.48E+03	-1.30E+03	1.30E+03
15.	-127.	-2.02E+04	2.02E+04	-2.00E+04	2.01E+04	-1.33E+03	1.35E+03
30.	-636.	-4.46E+04	4.46E+04	-4.42E+04	4.42E+04	-1.45E+03	1.49E+03
45.	-1.83E+03	-6.06E+04	6.03E+04	-5.82E+04	5.79E+04	-1.25E+03	1.33E+03
65.	-2.23E+03	-1.23E+05	1.13E+05	-1.18E+05	1.08E+05	-1.78E+03	1.69E+03

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Table N-879. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-880. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	7.15E-02	-5.47E+03	5.48E+03	-5.41E+03	5.42E+03	-1.08E+03	1.08E+03
15.	0.206	-1.53E+04	1.53E+04	-1.52E+04	1.52E+04	-1.01E+03	1.01E+03
30.	0.331	-2.81E+04	2.81E+04	-2.69E+04	2.70E+04	-896.	899.
45.	-4.88	-6.12E+04	6.11E+04	-5.39E+04	5.38E+04	-1.20E+03	1.20E+03
65.	11.0	-1.47E+05	1.38E+05	-1.22E+05	1.25E+05	-1.88E+03	1.92E+03

# TASK 1/ROLL MOTION/MODEL 5514

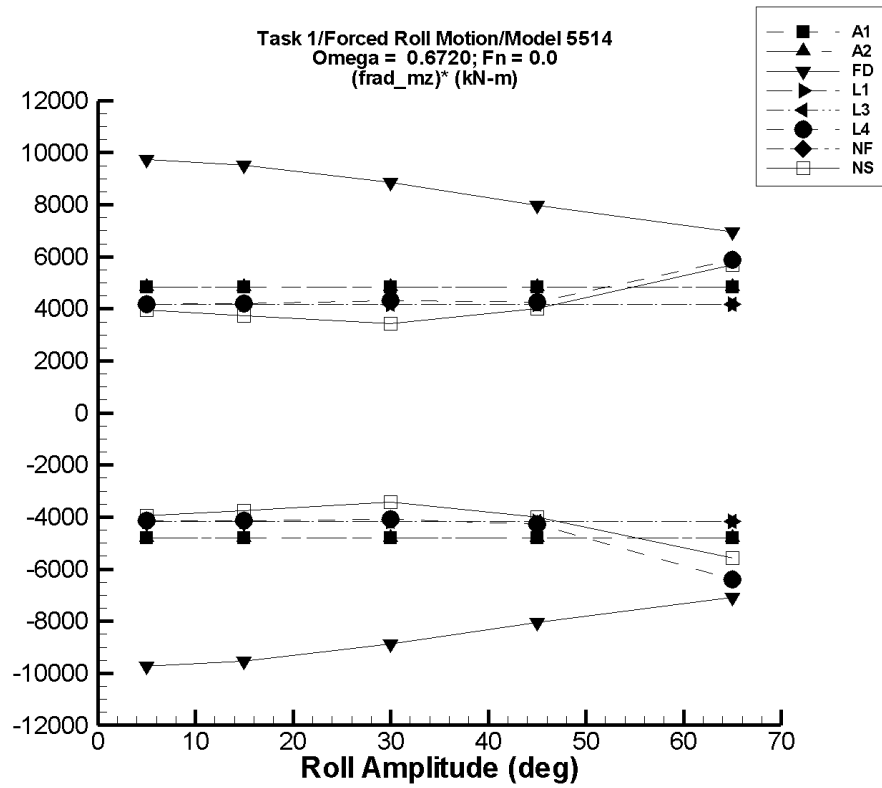


Figure N-111. Minimum and Maximum of  $(M_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.0.

Table N-881. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-33.6	-2.43E+04	2.45E+04	-2.40E+04	2.41E+04	-4.79E+03	4.84E+03
15.	-101.	-7.28E+04	7.33E+04	-7.19E+04	7.24E+04	-4.79E+03	4.83E+03
30.	-202.	-1.46E+05	1.47E+05	-1.44E+05	1.45E+05	-4.79E+03	4.83E+03
45.	-302.	-2.18E+05	2.20E+05	-2.16E+05	2.17E+05	-4.79E+03	4.83E+03
65.	-437.	-3.16E+05	3.18E+05	-3.12E+05	3.14E+05	-4.79E+03	4.83E+03

Table N-882. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-33.6	-2.43E+04	2.45E+04	-2.40E+04	2.41E+04	-4.79E+03	4.84E+03
15.	-101.	-7.28E+04	7.33E+04	-7.19E+04	7.24E+04	-4.79E+03	4.83E+03
30.	-202.	-1.46E+05	1.47E+05	-1.44E+05	1.45E+05	-4.79E+03	4.83E+03
45.	-302.	-2.18E+05	2.20E+05	-2.16E+05	2.17E+05	-4.79E+03	4.83E+03
65.	-437.	-3.16E+05	3.18E+05	-3.12E+05	3.14E+05	-4.79E+03	4.83E+03

Table N-883. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	2.16	-4.92E+04	4.93E+04	-4.87E+04	4.87E+04	-9.73E+03	9.74E+03
15.	60.3	-1.44E+05	1.44E+05	-1.43E+05	1.43E+05	-9.53E+03	9.52E+03
30.	472.	-2.69E+05	2.69E+05	-2.66E+05	2.66E+05	-8.88E+03	8.85E+03
45.	1.53E+03	-3.66E+05	3.66E+05	-3.61E+05	3.60E+05	-8.05E+03	7.98E+03
65.	4.25E+03	-4.69E+05	4.69E+05	-4.56E+05	4.57E+05	-7.09E+03	6.96E+03

Table N-884. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	0.561	-2.09E+04	2.09E+04	-2.08E+04	2.08E+04	-4.16E+03	4.16E+03
15.	1.71	-6.27E+04	6.27E+04	-6.24E+04	6.25E+04	-4.16E+03	4.16E+03
30.	3.44	-1.25E+05	1.25E+05	-1.25E+05	1.25E+05	-4.16E+03	4.16E+03
45.	5.19	-1.88E+05	1.88E+05	-1.87E+05	1.87E+05	-4.16E+03	4.16E+03
65.	7.65	-2.72E+05	2.72E+05	-2.71E+05	2.71E+05	-4.16E+03	4.16E+03

Table N-885. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	0.560	-2.09E+04	2.09E+04	-2.08E+04	2.08E+04	-4.16E+03	4.16E+03
15.	1.71	-6.27E+04	6.27E+04	-6.24E+04	6.25E+04	-4.16E+03	4.16E+03
30.	3.44	-1.25E+05	1.25E+05	-1.25E+05	1.25E+05	-4.16E+03	4.16E+03
45.	5.21	-1.88E+05	1.88E+05	-1.87E+05	1.87E+05	-4.16E+03	4.16E+03
65.	7.62	-2.72E+05	2.72E+05	-2.71E+05	2.71E+05	-4.16E+03	4.16E+03

Table N-886. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-16.7	-2.10E+04	2.10E+04	-2.08E+04	2.09E+04	-4.15E+03	4.18E+03
15.	-418.	-6.33E+04	6.35E+04	-6.26E+04	6.27E+04	-4.15E+03	4.21E+03
30.	-1.24E+03	-1.31E+05	1.33E+05	-1.24E+05	1.28E+05	-4.09E+03	4.30E+03
45.	-2.65E+03	-2.07E+05	1.97E+05	-1.95E+05	1.89E+05	-4.27E+03	4.25E+03
65.	3.92E+03	-4.34E+05	4.11E+05	-4.12E+05	3.86E+05	-6.39E+03	5.89E+03

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Table N-887. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-888. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.07	-1.99E+04	1.99E+04	-1.97E+04	1.97E+04	-3.94E+03	3.95E+03
15.	-3.19	-5.65E+04	5.66E+04	-5.61E+04	5.62E+04	-3.74E+03	3.75E+03
30.	-4.34	-1.06E+05	1.06E+05	-1.02E+05	1.03E+05	-3.41E+03	3.42E+03
45.	-16.5	-2.03E+05	2.03E+05	-1.80E+05	1.80E+05	-4.00E+03	4.00E+03
65.	-108.	-4.43E+05	4.04E+05	-3.63E+05	3.69E+05	-5.58E+03	5.69E+03



# TASK 1/ROLL MOTION/MODEL 5514

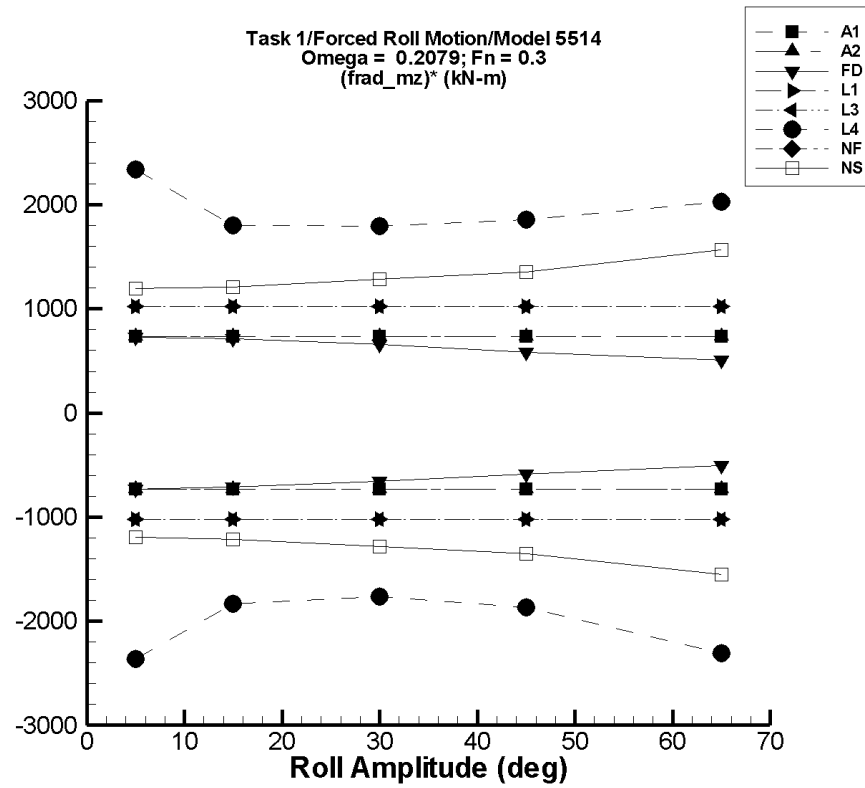


Figure N-112. Minimum and Maximum of  $(M_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.2079 rad/sec and Froude number 0.3.

TASK 1/ROLL MOTION/MODEL 5514

Table N-889. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.81	-3.89E+03	3.89E+03	-3.65E+03	3.66E+03	-730.	732.
15.	-5.42	-1.17E+04	1.17E+04	-1.09E+04	1.10E+04	-729.	732.
30.	-10.8	-2.33E+04	2.33E+04	-2.19E+04	2.20E+04	-729.	732.
45.	-16.3	-3.50E+04	3.50E+04	-3.28E+04	3.29E+04	-729.	732.
65.	-23.5	-5.05E+04	5.06E+04	-4.74E+04	4.76E+04	-729.	732.

Table N-890. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.81	-3.89E+03	3.89E+03	-3.65E+03	3.66E+03	-730.	732.
15.	-5.42	-1.17E+04	1.17E+04	-1.09E+04	1.10E+04	-729.	732.
30.	-10.8	-2.33E+04	2.33E+04	-2.19E+04	2.20E+04	-729.	732.
45.	-16.3	-3.50E+04	3.50E+04	-3.28E+04	3.29E+04	-729.	732.
65.	-23.5	-5.05E+04	5.06E+04	-4.74E+04	4.76E+04	-729.	732.

Table N-891. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	5.89E-02	-3.65E+03	3.65E+03	-3.65E+03	3.65E+03	-730.	730.
15.	1.61	-1.07E+04	1.07E+04	-1.07E+04	1.07E+04	-712.	712.
30.	12.6	-1.97E+04	1.97E+04	-1.97E+04	1.97E+04	-657.	656.
45.	41.3	-2.63E+04	2.63E+04	-2.63E+04	2.63E+04	-586.	584.
65.	116.	-3.30E+04	3.30E+04	-3.29E+04	3.29E+04	-508.	504.

Table N-892. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.836	-5.13E+03	5.12E+03	-5.12E+03	5.12E+03	-1.02E+03	1.02E+03
15.	-0.920	-1.54E+04	1.54E+04	-1.54E+04	1.54E+04	-1.02E+03	1.02E+03
30.	-0.969	-3.07E+04	3.07E+04	-3.07E+04	3.07E+04	-1.02E+03	1.02E+03
45.	-1.04	-4.61E+04	4.61E+04	-4.61E+04	4.61E+04	-1.02E+03	1.02E+03
65.	-1.10	-6.66E+04	6.66E+04	-6.66E+04	6.66E+04	-1.02E+03	1.02E+03

# TASK 1/ROLL MOTION/MODEL 5514

Table N-893. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	-1.45	-5.12E+03	5.12E+03	-5.12E+03	5.12E+03	-1.02E+03	1.02E+03
15.	-1.50	-1.54E+04	1.54E+04	-1.54E+04	1.54E+04	-1.02E+03	1.02E+03
30.	-1.55	-3.07E+04	3.07E+04	-3.07E+04	3.07E+04	-1.02E+03	1.02E+03
45.	-1.58	-4.61E+04	4.61E+04	-4.61E+04	4.61E+04	-1.02E+03	1.02E+03
65.	-1.60	-6.66E+04	6.66E+04	-6.66E+04	6.66E+04	-1.02E+03	1.02E+03

Table N-894. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	-139.	-1.59E+04	1.49E+04	-1.20E+04	1.15E+04	-2.37E+03	2.34E+03
15.	-686.	-3.20E+04	3.10E+04	-2.82E+04	2.64E+04	-1.84E+03	1.80E+03
30.	-249.	-5.84E+04	6.43E+04	-5.32E+04	5.35E+04	-1.77E+03	1.79E+03
45.	40.3	-9.21E+04	9.31E+04	-8.41E+04	8.35E+04	-1.87E+03	1.86E+03
65.	2.10E+03	-1.63E+05	1.54E+05	-1.48E+05	1.34E+05	-2.31E+03	2.03E+03

TASK 1/ROLL MOTION/MODEL 5514

Table N-895. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-896. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	1.79E-02	-6.04E+03	6.04E+03	-5.97E+03	5.97E+03	-1.19E+03	1.19E+03
15.	1.65E-02	-1.85E+04	1.85E+04	-1.82E+04	1.82E+04	-1.21E+03	1.21E+03
30.	0.507	-3.96E+04	3.96E+04	-3.85E+04	3.85E+04	-1.28E+03	1.28E+03
45.	9.88	-6.35E+04	6.35E+04	-6.09E+04	6.09E+04	-1.35E+03	1.35E+03
65.	-77.8	-1.11E+05	1.10E+05	-1.01E+05	1.02E+05	-1.55E+03	1.57E+03

# TASK 1/ROLL MOTION/MODEL 5514

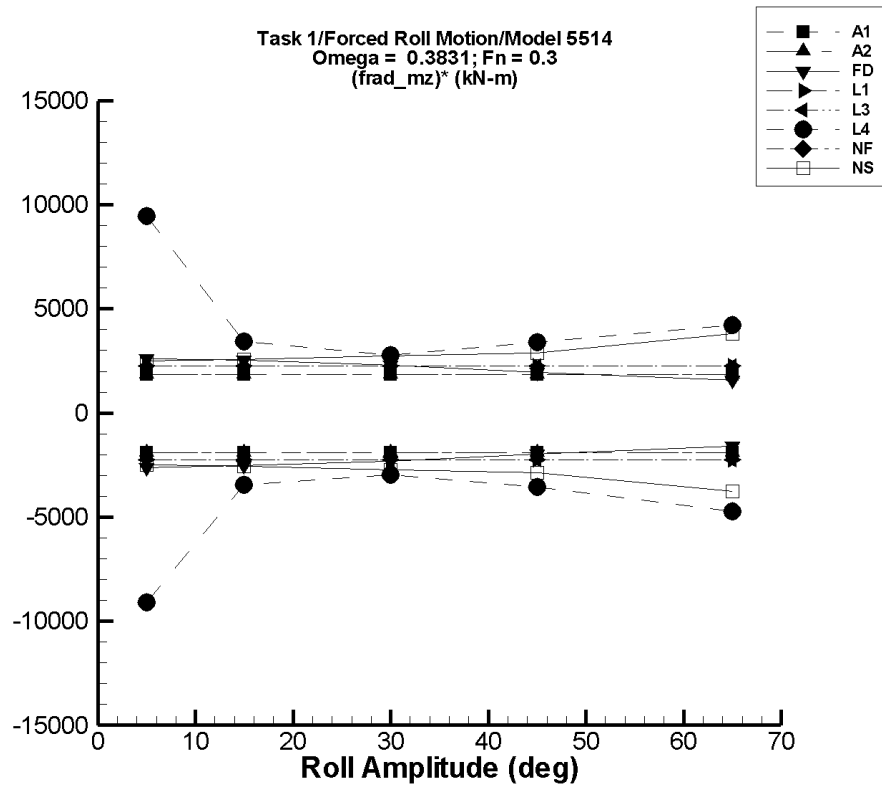


Figure N-113. Minimum and Maximum of  $(M_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.3831 rad/sec and Froude number 0.3.

Table N-897. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

<b>AEGIR-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-5.06	-9.56E+03	9.64E+03	-9.50E+03	9.31E+03	-1.90E+03	1.86E+03
15.	-15.2	-2.87E+04	2.89E+04	-2.85E+04	2.79E+04	-1.90E+03	1.86E+03
30.	-30.3	-5.73E+04	5.78E+04	-5.70E+04	5.59E+04	-1.90E+03	1.86E+03
45.	-45.5	-8.60E+04	8.67E+04	-8.54E+04	8.38E+04	-1.90E+03	1.86E+03
65.	-65.7	-1.24E+05	1.25E+05	-1.23E+05	1.21E+05	-1.90E+03	1.86E+03

Table N-898. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

<b>AEGIR-2</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-5.06	-9.56E+03	9.64E+03	-9.50E+03	9.31E+03	-1.90E+03	1.86E+03
15.	-15.2	-2.87E+04	2.89E+04	-2.85E+04	2.79E+04	-1.90E+03	1.86E+03
30.	-30.3	-5.73E+04	5.78E+04	-5.70E+04	5.59E+04	-1.90E+03	1.86E+03
45.	-45.5	-8.60E+04	8.67E+04	-8.54E+04	8.38E+04	-1.90E+03	1.86E+03
65.	-65.7	-1.24E+05	1.25E+05	-1.23E+05	1.21E+05	-1.90E+03	1.86E+03

Table N-899. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

<b>FREDYN</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	0.509	-1.31E+04	1.31E+04	-1.31E+04	1.31E+04	-2.61E+03	2.61E+03
15.	13.6	-3.82E+04	3.82E+04	-3.81E+04	3.81E+04	-2.54E+03	2.54E+03
30.	107.	-6.92E+04	6.92E+04	-6.90E+04	6.91E+04	-2.31E+03	2.30E+03
45.	349.	-8.86E+04	8.86E+04	-8.83E+04	8.83E+04	-1.97E+03	1.95E+03
65.	987.	-1.03E+05	1.03E+05	-1.02E+05	1.02E+05	-1.59E+03	1.56E+03

Table N-900. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

<b>LAMP-1</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	-0.669	-1.13E+04	1.13E+04	-1.13E+04	1.13E+04	-2.25E+03	2.25E+03
15.	-0.699	-3.39E+04	3.39E+04	-3.38E+04	3.38E+04	-2.25E+03	2.25E+03
30.	-0.722	-6.77E+04	6.77E+04	-6.76E+04	6.76E+04	-2.25E+03	2.25E+03
45.	-0.808	-1.02E+05	1.02E+05	-1.01E+05	1.01E+05	-2.25E+03	2.25E+03
65.	-1.03	-1.47E+05	1.47E+05	-1.47E+05	1.47E+05	-2.25E+03	2.25E+03



Table N-901. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

<b>LAMP-3</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.49	-1.13E+04	1.13E+04	-1.13E+04	1.13E+04	-2.25E+03	2.25E+03
15.	-1.52	-3.39E+04	3.39E+04	-3.38E+04	3.38E+04	-2.25E+03	2.25E+03
30.	-1.56	-6.77E+04	6.77E+04	-6.76E+04	6.76E+04	-2.25E+03	2.25E+03
45.	-1.69	-1.02E+05	1.02E+05	-1.01E+05	1.01E+05	-2.25E+03	2.25E+03
65.	-1.84	-1.47E+05	1.47E+05	-1.47E+05	1.47E+05	-2.25E+03	2.25E+03

Table N-902. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

<b>LAMP-4</b>							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-286.	-4.90E+04	5.05E+04	-4.57E+04	4.70E+04	-9.09E+03	9.46E+03
15.	-8.39	-5.67E+04	5.42E+04	-5.18E+04	5.15E+04	-3.45E+03	3.43E+03
30.	759.	-9.17E+04	9.00E+04	-8.83E+04	8.45E+04	-2.97E+03	2.79E+03
45.	564.	-1.68E+05	1.63E+05	-1.59E+05	1.53E+05	-3.55E+03	3.39E+03
65.	3.69E+03	-3.24E+05	2.88E+05	-3.03E+05	2.77E+05	-4.72E+03	4.21E+03

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Table N-903. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-904. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.331	-1.26E+04	1.26E+04	-1.25E+04	1.24E+04	-2.49E+03	2.49E+03
15.	-0.807	-3.90E+04	3.89E+04	-3.84E+04	3.83E+04	-2.56E+03	2.55E+03
30.	-1.48	-8.50E+04	8.48E+04	-8.22E+04	8.20E+04	-2.74E+03	2.73E+03
45.	5.61	-1.39E+05	1.39E+05	-1.29E+05	1.29E+05	-2.88E+03	2.87E+03
65.	-17.2	-2.69E+05	2.68E+05	-2.44E+05	2.47E+05	-3.75E+03	3.79E+03

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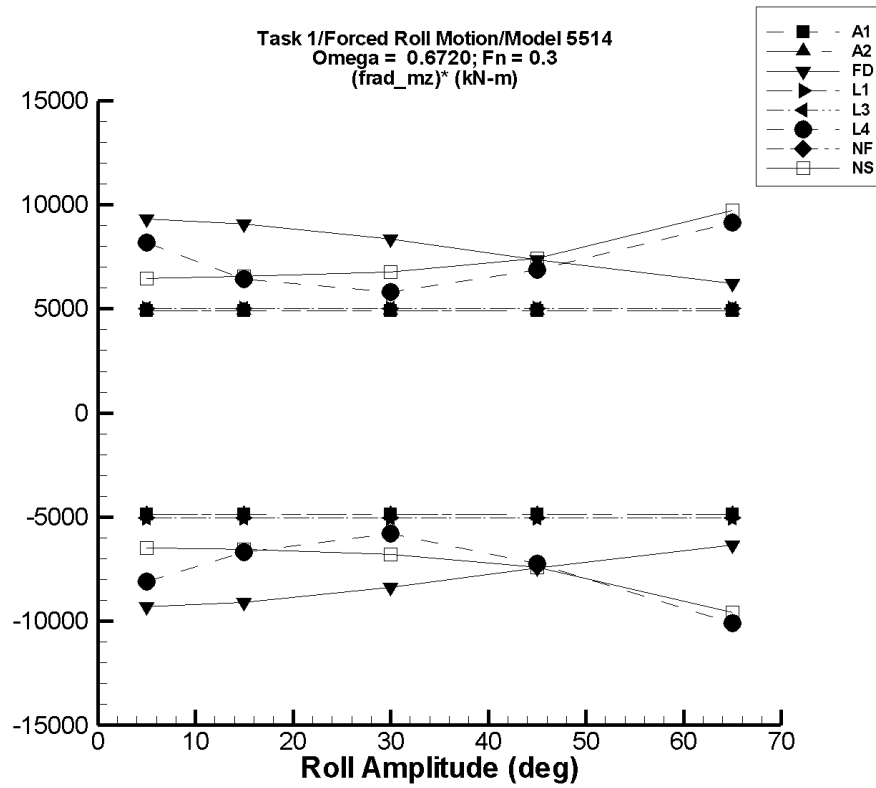


Figure N-114. Minimum and Maximum of  $(M_z^{\text{rad}})^*$  Versus  $\phi_a$  for Prescribed 1-DOF Roll Motion of Model 5514 ( $L = 142$  m) at Frequency 0.6720 rad/sec and Froude number 0.3.

Table N-905. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-1.

AEGIR-1							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-20.3	-2.47E+04	2.49E+04	-2.44E+04	2.45E+04	-4.88E+03	4.91E+03
15.	-60.9	-7.42E+04	7.46E+04	-7.32E+04	7.36E+04	-4.88E+03	4.91E+03
30.	-122.	-1.48E+05	1.49E+05	-1.46E+05	1.47E+05	-4.88E+03	4.91E+03
45.	-183.	-2.23E+05	2.24E+05	-2.20E+05	2.21E+05	-4.88E+03	4.91E+03
65.	-264.	-3.21E+05	3.23E+05	-3.17E+05	3.19E+05	-4.88E+03	4.91E+03

Table N-906. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from AEGIR-2.

AEGIR-2							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-20.3	-2.47E+04	2.49E+04	-2.44E+04	2.45E+04	-4.88E+03	4.91E+03
15.	-60.9	-7.42E+04	7.46E+04	-7.32E+04	7.36E+04	-4.88E+03	4.91E+03
30.	-122.	-1.48E+05	1.49E+05	-1.46E+05	1.47E+05	-4.88E+03	4.91E+03
45.	-183.	-2.23E+05	2.24E+05	-2.20E+05	2.21E+05	-4.88E+03	4.91E+03
65.	-264.	-3.21E+05	3.23E+05	-3.17E+05	3.19E+05	-4.88E+03	4.91E+03

Table N-907. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from FREDYN.

FREDYN							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	2.41	-4.71E+04	4.71E+04	-4.66E+04	4.66E+04	-9.32E+03	9.32E+03
15.	66.5	-1.38E+05	1.38E+05	-1.36E+05	1.36E+05	-9.09E+03	9.09E+03
30.	521.	-2.54E+05	2.54E+05	-2.51E+05	2.51E+05	-8.38E+03	8.35E+03
45.	1.69E+03	-3.37E+05	3.37E+05	-3.33E+05	3.33E+05	-7.44E+03	7.36E+03
65.	4.71E+03	-4.19E+05	4.19E+05	-4.08E+05	4.08E+05	-6.35E+03	6.21E+03

Table N-908. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-1.

LAMP-1							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered $(M_z^{\text{rad}})^*$ Min. (kN-m/°)	Max. (kN-m/°)
5.	-0.634	-2.52E+04	2.52E+04	-2.51E+04	2.51E+04	-5.02E+03	5.02E+03
15.	-0.643	-7.57E+04	7.57E+04	-7.54E+04	7.54E+04	-5.02E+03	5.02E+03
30.	-0.712	-1.51E+05	1.51E+05	-1.51E+05	1.51E+05	-5.02E+03	5.02E+03
45.	-0.797	-2.27E+05	2.27E+05	-2.26E+05	2.26E+05	-5.02E+03	5.02E+03
65.	-1.03	-3.28E+05	3.28E+05	-3.27E+05	3.27E+05	-5.02E+03	5.02E+03

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Table N-909. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-3.

LAMP-3							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	-1.45	-2.52E+04	2.52E+04	-2.51E+04	2.51E+04	-5.02E+03	5.02E+03
15.	-1.45	-7.57E+04	7.57E+04	-7.54E+04	7.54E+04	-5.02E+03	5.02E+03
30.	-1.52	-1.51E+05	1.51E+05	-1.51E+05	1.51E+05	-5.02E+03	5.02E+03
45.	-1.69	-2.27E+05	2.27E+05	-2.26E+05	2.26E+05	-5.02E+03	5.02E+03
65.	-2.05	-3.28E+05	3.28E+05	-3.27E+05	3.27E+05	-5.02E+03	5.02E+03

Table N-910. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from LAMP-4.

LAMP-4							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m)	$M_z^{\text{rad}}$ Max. (kN-m)	Filtered Min. (kN-m/°)	$(M_z^{\text{rad}})^*$ Max. (kN-m/°)
5.	9.50	-4.36E+04	4.13E+04	-4.04E+04	4.09E+04	-8.08E+03	8.17E+03
15.	300.	-1.06E+05	1.04E+05	-1.00E+05	9.67E+04	-6.68E+03	6.43E+03
30.	755.	-1.79E+05	1.84E+05	-1.73E+05	1.75E+05	-5.80E+03	5.81E+03
45.	571.	-3.41E+05	3.37E+05	-3.26E+05	3.09E+05	-7.25E+03	6.86E+03
65.	8.89E+03	-6.94E+05	6.53E+05	-6.46E+05	6.03E+05	-1.01E+04	9.14E+03

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Table N-911. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NFA.

NFA							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	—	—	—	—	—	—	—
15.	—	—	—	—	—	—	—
30.	—	—	—	—	—	—	—
45.	—	—	—	—	—	—	—
65.	—	—	—	—	—	—	—

Table N-912. Minimum and Maximum of  $M_z^{\text{rad}}$  for Prescribed 1-DOF Roll Motion of Model 5514 (L = 142 m) at Frequency 0.2079 rad/sec and Froude number 0.0 from NSHIPMO.

NSHIPMO							
$\phi_a$ (°)	$\langle M_z^{\text{rad}} \rangle$ Mean (kN-m)	Unfiltered $M_z^{\text{rad}}$		Filtered $M_z^{\text{rad}}$		Filtered $(M_z^{\text{rad}})^*$	
		Min. (kN-m)	Max. (kN-m)	Min. (kN-m)	Max. (kN-m)	Min. (kN-m/°)	Max. (kN-m/°)
5.	-1.80	-3.29E+04	3.28E+04	-3.24E+04	3.24E+04	-6.47E+03	6.47E+03
15.	-5.49	-1.01E+05	1.01E+05	-9.84E+04	9.84E+04	-6.56E+03	6.56E+03
30.	-10.8	-2.09E+05	2.09E+05	-2.03E+05	2.03E+05	-6.78E+03	6.78E+03
45.	-2.37	-3.52E+05	3.52E+05	-3.33E+05	3.33E+05	-7.40E+03	7.41E+03
65.	-194.	-6.80E+05	6.83E+05	-6.23E+05	6.33E+05	-9.58E+03	9.74E+03